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AMIGA SHOPPER

From the makers of AMIGA FORMAT

ISSUE 25 • MAY 1993 • £2.50

YOUR *DEFINITIVE* AMIGA GUIDE

Get a new word processor!



INSIDE

• KNOW YOUR RIGHTS

Hassle with mail order companies? We tell you your rights and how to exercise them

Amiga Advocate: page 45

• MOVIES ON THE CHEAP

On location with VideoMaster, Microdeal's incredible low-cost digitiser and sampler

Video: page 60

• ON THE COVER DISK

A complete text editor and spelling checker are just two of the programs included

Cover Disk: page 26

NO DISK?
NO PROBLEM!
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FOR ANOTHER ONE

The latest word processors reviewed and compared

AMIGA ANSWERS

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AMIGA SHOPPER AT-A-GLANCE GUIDE

To help you find what you want quickly and easily, this is a cross-referenced list of all the products and subjects covered in this month's *Amiga Shopper*. You'll find a detailed index to the many subjects dealt covered in the problem-solving *Amiga Answers* section given on page 23. The page numbers given are for the first page of the article in which the subject is mentioned.

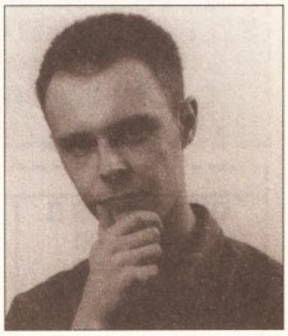
Are there any products or subjects you'd like us to take a look at? Well, just drop a line to:

Amiga Shopper,
30 Monmouth Street,
Bath, Avon BA1 2BW.

WELCOME

The word processor is mightier than the pen. No matter what you write or how much you write, there's no denying the fact that a word processor will make your task easier. Quite apart from the advantages that all such programs give – ease of making changes to text, control over formatting and so forth – many provide a whole range of extra features such as spelling checking, the option to include graphics and word counting facilities. To find out exactly which word processor is the mightiest, turn to page 14. You'll find it's not just an article about which word processor is best, though, but one which will help you in getting the right package for your needs – you'll find similar word processors are closely compared, and the relative advantages of their various features carefully weighed.

Those of you not quite ready to take the financial plunge should already be ripping the polythene from your cover disk. On it is a fully-featured text editor, as well as a spelling checker with a huge dictionary – plenty good for the occasional wordsmith. Of course, you'll find plenty of other useful goodies on there, including the source code to all of this month's programming articles.



In this issue you'll also find the first in a new series, Amiga Advocate. It offers legal advice and help to the unfortunates amongst you who have had unpleasant dealings with mail order companies. With luck, you won't need it, but if you do, turn to page 45.

Enjoy the issue, and make sure you join us next month when we'll be bringing you some hot news from Commodore.



PUBLIC DOMAIN WORLD

SOFTWARE FOR FREE

There are thousands of Amiga programs which are available for little more than the price of a disk. There are also many, many more which you can try out before you buy. In Public Domain World we examine the best of these programs and explain how to get hold of them.

As well as our usual round-up of the latest PD, we've also got a special competition running this month – check out page 107 for details of how you can win a hoard of software. Public Domain World or

Free lunch freak-out

as we call it this month, starts on page 105

AMIGA ANSWERS

10 PAGES DEVOTED EXCLUSIVELY TO ANSWERING YOUR QUESTIONS

Every month in Amiga Answers our panel, comprising experts from each of the major fields of Amiga computing, answers more genuine reader questions than any other Amiga magazine. And in the Code Clinic all your programming errors will be explained and corrected as well!

We answer questions every month on Workbench • The CLI • Comms • Programming • DTP • Video • Business software • And more!

THE ANSWERS START ON PAGE 29

FOR A FULL LIST OF CONTENTS, TURN THE PAGE

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AMIGA SHOPPER

Issue 25 – May 1993

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Who fancies a year's free subscription? Just tell us who was the first author ever to submit a typewritten manuscript for publication. Send your answers to: 'QWERTYUIOP is my middle name', *Amiga Shopper*, 30 Monmouth St, Bath BA1 2BW. First correct answer out of the bag wins 12 free issues. Last month's answer: the play TS Eliot thought flawed by its lack of an 'objective correlative' was *Hamlet*. The winner: ND Sisson, Clacton-on-Sea, Essex.

FRESH FRACTALS

The latest version of the fractal art and animation package, *FractalPro 6.0*, was released by MegageM in early March. It's a powerful tool for generating complex fractal images and animations and makes full use of the Amiga's new AGA chip set.

***FractalPro 6.0* is available from California-based MegageM for $207.95, including shipping charges to the UK. Upgrades are available for owners of earlier versions. For further details contact MegageM ☎ 0101 805 349 1104.**

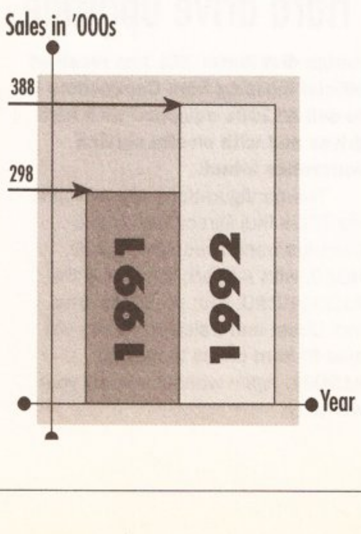
Changed venue

If you were planning to visit the All Formats Computer Fair at Sandown Park on April 24 – don't. The incorrect venue was printed on the tickets. The show will actually be taking place at the Novotel in Hammersmith. For more information contact the organisers on: 0608 662212.

AMIGA SALES BOOMING

Recession? What recession? Commodore certainly seems to have escaped the worst ravages of our nation's current economic woes with an impressive rise of 27% in UK Amiga sales during 1992.

Its recently released figures show that sales for last year in the UK rose to 388,000 units compared with the 298,000 Amiga's that were shipped during 1991. In particular, sales of the A1200 have been very encouraging – with 44,000 machines sold. Commodore's UK supremo, Kelly Sumner commented: "These figures show that Commodore dominates the home computer market in the UK. It's a position we've held for many years and one which, thanks to a new range of Amigas and a burgeoning PC division, we expect to maintain."



OKI TAKES A RISC WITH PRINTER


Oki's printer promises cheap running costs and high quality

OKI has released a new machine into the mid-range sector of the printer market.

The OL400e is a page printer that uses LED technology, which, it is claimed, produces crisper output and better grey-scaling than that of ordinary laser printers. Its resolution is 300 dots per inch.

Keeping costs down is a strong selling point of the OL400e, which has a retail price of only £499. A power saving mode will automatically drop the printer's power consumption when it is idling, ready to increase when its services are required; while drum life has been extended to 20,000 pages and toner life has been extended to 2,000.

Furthermore, the printer's RISC processor provides data compression to make the most efficient use of its standard 0.5Mb of memory. This is expandable in stages up to a maximum of 4.5Mb.

For more information on the OL400e contact OKI ☎ 0753 819819.

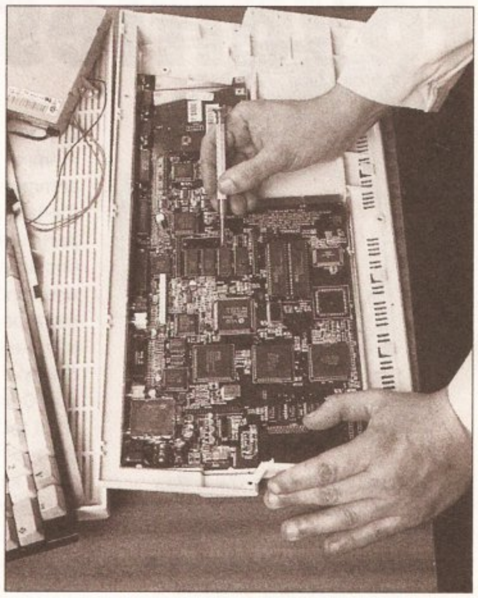
Service delays for A600/1200 owners

Some users of A600s and 1200s have experienced considerable delays when they've had cause to request an engineer's visit under the free 12 month in-home warranty that covers all UK purchasers.

Commodore's Warranty Registration Card offers the home service guarantee on a 'four working day basis', but a number of reports from *Amiga Shopper* readers indicate that in January and February waiting times of between four and six weeks were commonplace. Several factors seem to have contributed to these delays. Initially, Wang – Commodore's sub-contracted service agent – was overwhelmed by the volume of calls received.
Commenting on the problems, Terry Wicks, Business Service Manager for Wang said: "The major sales success of Amiga products during the Christmas period led to an unforseen number of customer calls immediately prior to Christmas. This caused a number of problems for Wang with the sheer volume of activity. However, Wang has made and continues to make significant investment in personnel and systems to ensure that Commodore users receive the highest levels of service".

A further contributing factor was the distribution of a batch of some 2,000 A1200s (around 5% of Commodore's pre-Christmas sales) fitted with faulty modulators, and a subsequent shortage of spare parts. We've been given to understand that Wang's service engineers now have adequate stocks of replacement modulators and that these are being fitted as and when faulty units are reported. It may well be, though, that a number of A1200 purchasers who use a monitor won't be aware that they have a faulty modulator circuit. If you only use your A1200 with a monitor, you should take the time to check the modulator by connecting the 1200 to a TV set while you are still within the one year warranty period.

Additional problems stemmed from the fact that while Wang has considerable experience in fulfilling computer service agreements in the business environment it has had relatively little in the consumer marketplace. This meant that the company found itself arranging engineer visits when some very basic telephone support would have solved the problem. These 'faults' often turned out to require no more of a technical fix than pushing a lead securely home, or adjusting the video tuning screw next to the RF modulator socket. A number of disk drive faults were cured by showing the user how to write-enable a disk! Wang tells us that it has now introduced a more detailed telephone diagnosis service to help eliminate these spurious call-outs.


A batch of faulty A1200s contributed to the delays in service engineers repairing Amigas on-site

We talked to Steve Merryweather, UK Operations Manager for Commodore, who, while expressing concern and regret about these 'teething problems', told us that he now reviews response times on 'a daily basis'. He went on to say: "I am confident that Wang now has the resources in place to meet its contractual obligations".

Amiga Shopper will be keeping a close eye on the situation over the coming months to check that these teething problems have been resolved – and we will be reporting further in a future issue.

If you have need to use the in-home service warranty and experience an unreasonable delay, we'd like to hear from you. Drop us a line giving details of the surrounding circumstances and send it to:

Service Report, Amiga Shopper, 30 Monmouth Street, Bath, BA1 2BW.

WIN! FREE MOUSE MATS



Spectra Video has just released a new mouse mat under the *Logic3* brand name. It's worth £3.99 and we've got 25 of them to giveaway. If you want the chance to win one, simply write your name and address on the back of a postcard (or sealed envelope) and send it to: What's The Matter?, Amiga Shopper, 29 Monmouth Street, Bath, BA1 2DL. The first 25 cards out of the hat on May 10 win – it's as simple as that.

Art Department re-stocked

ASDG has announced an upgrade to its popular *Art Department Professional* image processing package.

Version 2.3's major improvement lies in the links it now has with other Amiga video tools. It comes with complete support for NewTek's *Video Toaster*, being able to read and write its Framestore file format and opening up the possibility of users in a network manipulating *Toaster* images without actually posessing *Toaster*-equipped machines.

Links have also been forged with Electronic Arts' *Deluxe Paint IV* package and Centaur Developments' *OpalPaint*. Users of either of these programs will now be able to load, save and work on images in any file format comprehensible to *ADPro*. The new version will be distributed in the UK by HB Marketing ☎ 0753 686000, but a price has yet to be fixed. ASDG ☎ 0101 608 273 6585.

INSTALL YOUR HARD DRIVE

The First Computer Centre has satisfied the demand created by Commodore's tardiness at supplying hard disk installation software for the A1200.

For the price of £5.99 The First Computer Centre is selling a disk that comes with documentation and programs to prep, partition and format hard disks. Also included is a program that will install Workbench and its associated files to the hard disk. The First Computer Centre ☎ 0532 319444.



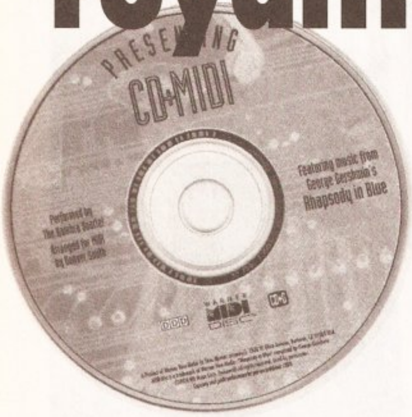
New Horizon Computers' Vanilla monitors are compatible with the new AGA screen modes

NEW MONITORS

Two high resolution monitors compatible with the AGA screen modes of the A1200 and A4000 have been launched by New Horizon Computers.

Constituting the Vanilla range, the monitors are available in both 15 and 17 inch screen sizes, utilising Flat Screen Technology. Prices are yet to be fixed, but are said by the company to be 'very affordable'. The monitors have a dot pitch of 0.28mm and a video bandwidth of 80MHz. More details from New Horizon Computers ☎ 0989 750260.

Commodore hike CD royalties by 1200%



For the past few weeks there has been considerable comment on the bulletin boards about a recent announcement that Commodore is to increase the royalty payment it charges on CDs by 1200%.

The price hike from 25c to $3 was announced at the recent software developers conference in Orlando and came as a shock to many of the delegates. One commented to us: "This looks like the last nail in the coffin for CDTV; in particular it's going to have a major impact on PD releases." Commodore was, understandably, putting a much more positive spin on the news. UK MD, Kelly Sumner, told *Amiga Shopper* that: "It is public knowledge that Commodore is committed to CD-ROM technology. Commodore took the lead position with the release of CDTV and started what we believe will be the mass installation of CD-ROMs in homes worldwide. In order to be successful long-term in this marketplace, we believe we need to improve both our installed base and our developer support. These efforts require investment and we consider it appropriate to share this with companies who will also take a share of the potential benefits. We do not believe the royalties require higher software prices as they are not in the same league as the royalties demanded by Sega or Nintendo."

The rumours currently circulating in the industry are that Commodore has pushed through this price rise prior to announcing a new series of Amigas with integral CD-ROM drives. A move to built-in CD-ROMs presents benefits for both software publishers and end-users. The opportunities for software piracy will be substantially reduced, which should lead to more developers committing the substantial resources needed to develop professional packages. Whether Commodore's move will help or hinder the development of CD-ROM technology remains to be seen.

NEW TECHNOLOGY IN EPSON PRINTER



Epson's *Stylus* 800 makes use of piezo-electric technology to provide a claimed improvement in both speed and output quality

Epson's latest ink jet printer makes use of the company's newly-developed piezo-electric print head technology.

The *Stylus 800* has a retail price of £379, for which you get a machine capable of a top speed of 150 characters per second at a laser printer-beating resolution of 360 dots per inch.

The new technology used in the print head, which makes use of tiny piezo crystals to create miniature 'pistons' to pump the ink, ensures that dots are crisp and circular in shape. It also results in an increase in reliability, which means that in normal use the printhead should never need replacing during the printer's lifetime.

Four scalable and fifteen bitmapped fonts are provided. Software control is implemented via the ESC/P2 printer control language.

For more details contact Epson ☎ 0442 61144.

New Display

The Amiga Centre Scotland is distributing an exciting new display card for the A1500 and above range of Amigas.

The Retina, at a starting price of £345, is a low-cost graphics solution that provides a 24-bit 16 million colour display at resolutions of up to 800x600. A resolution of 1,280x 1,024 is selectable with a 256 colour palette. The card is compatible with a wide range of monitors, including VGA, 1084 and 1960s.

A feature of Retina is its Workbench emulation software, which enables Workbench-based applications to run on the display board, eliminating the need for two monitors. Retina is available in a variety of RAM configurations: 1Mb for £345, 2Mb for £409 and 4Mb for £499. Amiga Centre Scotland ☎ 089 687 583.

Hard drive upgrade

Amiga distributor ZCL has received official blessing from Commodore UK to sell A1200s equipped with hard drives and with on-site service warranties intact.

Two configurations are available via ZCL's Indi Direct stores and Calculus franchises: the A1200 HD60, with a 60Mb drive; and the A1200 HD80, with an 80Mb drive. Indi Direct and Calculus stores will also fit hard drives to current A1200s, again without voiding your warranty.

Expand

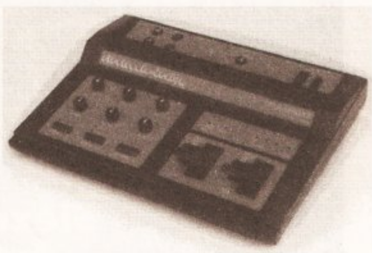
your Amiga's potential

Add graphics to videos, download from BBSs, send faxes, genlock, increase memory and more. With these top-of-the-line hardware products from Supra electronic-design, and bsc, it's easy to expand your Amiga's potential.

from electronic-design

Genlocks

Three feature-loaded genlocks for Amiga DTV producers. Each features fading, superimposing, colour splitting and RGB output.



Sirius Genlock (pictured) £749.95

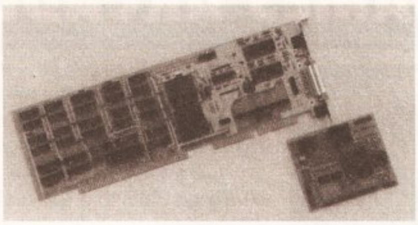
- supports Y-C and composite signals
- transcodes Y-C to composite and vice-versa
- monitor bypass

Y-C Genlock for SVHS/VHS use £499.95

PAL Genlock for VHS use £329.95

Realtime Digitiser for A2000/A3000/A4000

Achieve realtime digitising with the FrameMachine.



- single-frame and sequence digitising in up to 16.8 million colours
- 24bit animation
- video mixer option

FrameMachine Basic Board £379.95

FrameMachine & Prism-24 (24bit Framebuffer) £659.95

FrameStore: FrameMachine plus Art Department £379.95

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Looking for a fax/modem communications solution? You'll want a Supra modem.



- fax/data modem with error correction, data compression and full Group 3 compatibility
- view faxes on screen or print them to paper
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- includes everything you need to start work: software, necessary cables, etc.

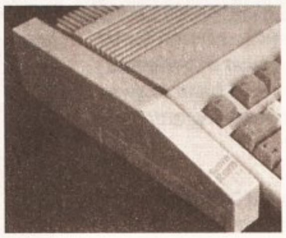
Supra v.32bis Fax Modem £399.95

Supra Fax Modem Plus £179.95

Memory Expansion

Add up to 8MB of fast RAM to your Amiga 500 with this compact memory expansion.

- slimline design
- on/off switch
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Supra 500RX 2MB £169.95

Floppy Drive

Supra's slimline external drive is the ideal add-on for any Amiga.

- no more drive click
- bootblock protector to stop viruses
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Supra Drive £64.95

from bsc

A600/A1200 Memory Expansion

Get fast RAM memory expansion for the A600/A1200 with MemoryMaster600.

- 20% faster than chip RAM
- only 5mm thick!
- simply plug in and go
- does not invalidate your warranty



MemoryMaster600 2MB £129.95

IDE Hard Drive Controller

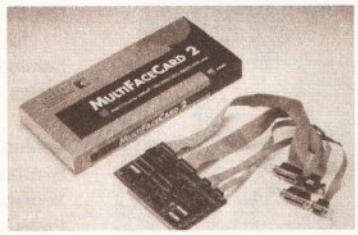
Here's a low cost alternative to a SCSI controller for the A2000.

- compact, autobooting IDE hard drive controller
- expandable to 2, 4, 6, 8MB RAM
- Rigid Disk Block compatible
- compatible with PC and A1200/A4000 hard disks

AT-Bus 2008 £89.95

Parallel/Serial Ports

Two parallel ports and two serial ports in one card. Connect modems, scanners, printers and more – once and for all – without sacrificing transfer rates.



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- fully compatible with Commodore ports
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MultiFaceCard2 v2.6 £149.95

Contact your local dealer or ring Micro-PACE on (+44) 0753 551 888 for the dealer nearest you.

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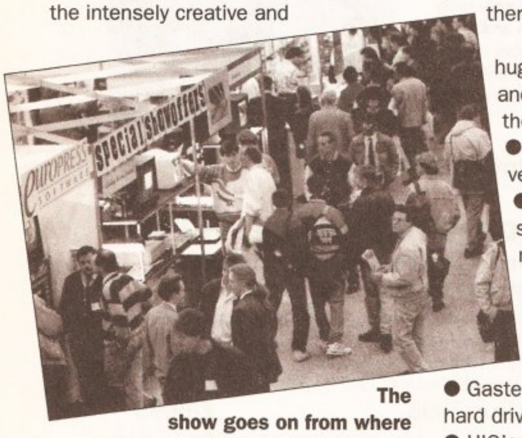
It's showtime: live the dream

AMIGA FORMAT Live '93
WEMBLEY EXHIBITION CENTRE
7 - 9 MAY 1993

We give you the full low-down on May's Amiga Format Live Show. Read on to see why it promises to be such a lively event

From May 7 till May 9, the Wembley Exhibition Centre will be engulfed by hordes of Amiga enthusiasts eager to see the latest and greatest releases on the hardware and software fronts.

The occasion is the *Amiga Format Live* show, a celebration of all things Amiga and a show-case for the intensely creative and entrepreneurial third party manufacturers who support it. It's not just a chance to seeof the Amiga's future, but also a place to learn, to relax, and to pick up some bargains.



The show goes on from where the *Amiga Shopper Show* left off

Although sponsored by *Amiga Format*, the show takes over from last year's *Amiga Shopper Show*. And you'll certainly be able to find us there in force.

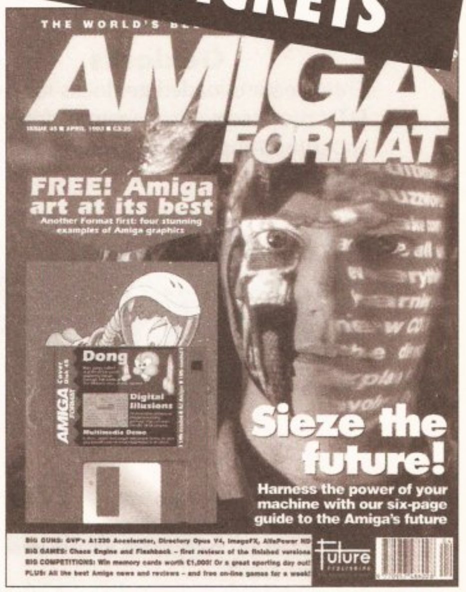
Of course, there'll be a huge number of manufacturers and publishers present to show their latest wares:

● Care Electronics, with a new version of *Flexidump*.
● Digita International will be showing *Wordworth 2 AGA*, new fonts and clip art.
● Electronic Arts will have version 2 of its *Deluxe Music Construction Kit* on display.
● Gasteiner will have a new mouse, hard drive and hand scanner.
● HIQ's stand will be showing an '040 accelerator and AVideo.
● New Horizons Computers will show Blizzard RAM expansions for the A1200.
● Power Computing will be showing a high density floppy drive and a range of new memory expansions.
● Quill Marketing, with its textile transfer paper, will be printing direct to textiles.
● Rombo will have two new launches: one a 24-bit digitiser, the other a secret...

Get your tickets now on the hotline ☎ 051 356 5085 (see page 100 for details).

We have six pairs of tickets to give away to the first six entries out of the hat on April 30. Just put your name and address on a postcard or SAE and send it to: Freebies! Amiga Shopper, 29 Monmouth Street, Bath BA1 2DL.

FREE TICKETS



***Amiga Format* is the world's best-selling Amiga magazine. You can be sure the team that puts it together will bring you a show like no other**

SOUND AND VISION...



See ASDG's mind-bending *Morph Plus* in action

One of the things that will set the *Amiga Format Live* show apart from other, lesser, shows, is its broad range of seminars and product demonstrations. In particular the show will be focussing on the Amiga's abilities in the areas of music and graphics, catered for by the *Sound And Vision Experience*.

Experts will be on hand to give seminars on the following areas of Amiga creativity:

● Music and sound effects, featuring Sunrize's AD1016 sound card, Yamaha keyboards, and the *Bars & Pipes* and *Music X* sequencers.

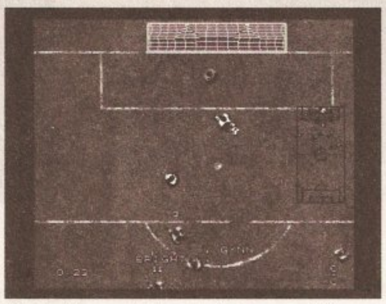
● Animation and special effects, with *Deluxe Paint, Morph Plus, Art Department Pro* and *OpalVision*.

● Titling and genlocks, courtesy of Hama's genlocks, Roctec's *Chroma Key* and *Scala*.

● Video Editing, performed with *Editman* and *Video Pilot*.

If you want to see what your Amiga is really capable of, check out the *Sound And Vision Experience*.

THE GAMES ARCADE



Virgin Games' *Goal* is just one of the many new releases you'll be able to have a good go at in the *Amiga Power Games Arcade*

OK, admit it: how many of you play the odd game? Well, now's your chance to try out the hottest releases from some of the biggest names in Amiga games publishing.

A whole 150 metre section of the Wembley Exhibition Centre will be devoted to the *Amiga Power Games Arcade*. Here you'll be able to meet the team responsible for our sister magazine (they're really rather nice, actually), have a good chat with them, argue about their choice of the top 100 games, and maybe challenge them to a stand-off competition.

As well as old favourites, there'll be plenty of new releases for you to choose from:

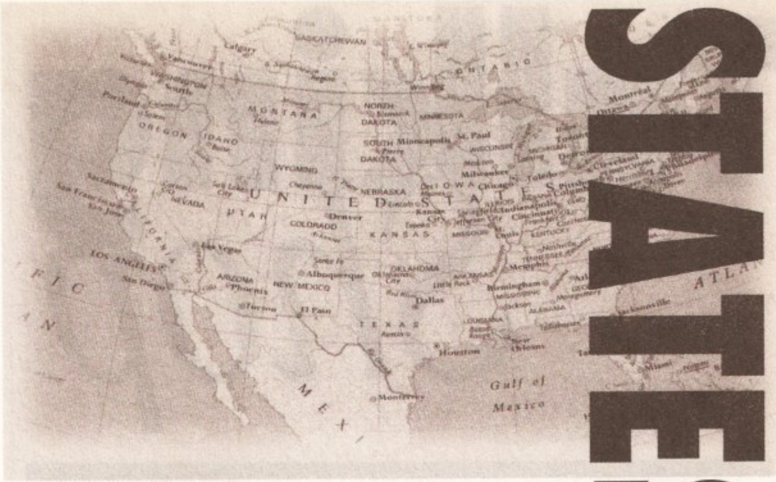
● Virgin will be launching *Dune 2, Goal, Beneath The Steel Sky* and *Apocalypse*.

● Gremlin will be drawing the crowds with *HeroQuest 2: The Legacy Of Sorasil* and *Litil Divil*.

● While Microprose will be unveiling *B17* and *Gunship 2000*.

Prizes are up for grabs from each publisher for top scorers, so come along and have a go.

STATESIDE



Bob Liddil reports on GVP's aim to satisfy the need for speed, while Terry Kepner tells an Amiga tale of scientific fiction

This month I've asked my ol' pardner Terry Kepner to give you the low-down on *Babylon 5*, a hot new science fiction TV program that's been put together with the aid of Amigas. See the box-out below for the space-age details.

Back on planet Earth, though, it's been snowing like a madman. But soon the snow squalls will be history and the World of Commodore Amiga show in New York City will sizzle with excitement (keep your hair on, Amigos – I'll be giving ya a *full* report next month). Nothing cooks better than a scorching accelerator for your Amiga. Owners of the new Amiga A1200 will now be able to add an accelerator, thanks to the folks at Great Valley Products.

They call it the *A1230 Turbo*. We call it Firepower! This 40MHz accelerator that can be easily installed inside the expansion bay on the bottom of the A1200 computer. Two SIMM sockets allow for the expansion of up to 32Mb of 32-bit wide 60ns DRAM. The A1230 Turbo also includes a socket for an optional FPU, which dramatically increases the performance of floating-point intensive applications.

This system uses the same technology as that found in GVP's Turbo and Combo family of accelerators, and comes with 1Mb of 32-bit RAM in a modular RAM design that allows users many options for adding memory. When 4Mb SIMMS are used, the A1230 can be configured with either 4Mb or 8Mb of RAM. The accelerator will also accept 16Mb SIMMs, which allows for RAM expansion up to 32Mb. Other options allow the user to install various combinations of 1Mb, 4Mb and 16Mb SIMMs.

The suggested list price for the A1230 Turbo is US$499.00. Want to feel the heat? Contact: Great Valley Products, 600 Clark Avenue, King of Prussia, PA 19406. ☎ 0101 215 337-8770. Silica Systems will be handling the product in the UK, selling it for £399. Silica ☎ 081 309 1111.

Well, buckaroos, there's five feet of snow in my driveway that needs shovelin', so here's your Amiga cowboy sayin' 'Whoopie-ty-yi-brrrrrrr and wishing fer spring, big-time!'

AMIGAS IN SPACE – A REPORT BY TERRY KEPNER

With the assistance of Commodore Amigas, *Video Toasters*, and lots of hard work, *Babylon 5* beamed into television sets across the US the last week of February. An accurate understanding of science, drama, and computers enabled Joe Straczynski, the creator and producer of the science-fiction series, to make a two-hour premier episode on time and under-budget. And that budget was one-quarter the amount spent by their competition at Paramount.

"The use of Amigas was intrumental in keeping costs down, and will continue to be so in the future," says Jim Straczynski. "We'll be able to use a lot of new special effects footage in every episode of the series, unlike *Star Trek – The Next Generation*, for instance, which generally uses the same shots with different planetary backgrounds, and the same fly-by shot. On average, we'll be able to do 3 to 4 new minutes of footage for every show, and can build up from there. Combined with the stock that we will have and which will grow as we go, that'll give us a heck of a look."

Straczynski attributes the realistic look of the special effects to the methods used in creating the computer models. "The way standard space special effects are done is that they create a plate of a starfield; over this, they put a plate of a planet, then finally overlay a plate of, say, a ship going by," explains Straczynski.

SOLAR SYSTEM IN A BOX

"Nothing is really to size or in perspective. Ron Thornton, our FX Supervisor, has created in the computer a sector of space about as big as a solar system. He's put the star in one place, Babylon 5 in another, the planet and moon in still another, and anything that enters that system – ships or anything else – is sized to scale. It's all created to the actual scale involved. So, when an object moves through that sector of space, it's moving through 'real space,' with everything in its proper perspective. Consequently, the eye accepts it as more real, more three-dimensional. Things moving away recede into the proper size and distance, and approach growing in correct size and perspective. It's really a stunning effect."

On the subject of special effects and the rest of the series, Straczynski says: "I can't elaborate, but the first script that I've turned in for an hour-episode has an extremely elaborate special effects sequence – several of them, actually, which are linked – which goes considerably beyond anything we demonstrated in the pilot.

ARRIVAL OF THE GOOD STUFF

"Ron went over the sequence, and apparently it poses no problem. Beyond that, we have general plans to push this new technology to the absolute edge of its capabilities. The pilot was a test... the *good stuff* is yet to come!"

Foundation Imaging started the special effects work in June and delivered the last shot in the first week of November. There are around 50 shots, all of which were completed with about a dozen *Video Toasters*. "If it weren't for those little boxes," says Mojo, one of the series animators, *"Babylon 5* would look a heck of a lot less spectacular. Originally they were going to go with traditional models and motion control," he adds, "but when Ron showed Joe and the rest of the producers what could be done with the same money on the *Toaster*, *Babylon 5* suddenly had more FX shots than I think an entire season of *Star Trek!*

To produce the many exterior space sequences, a basic *Toaster* configuration of an Amiga 2000 with 32Mb of RAM and RCS 25MHz '040 was used. Eight of these were constantly rendering to a 4Gb network, each one working on one frame at a time.

Even with this arrangement, some sequences took a geat deal of time to create. The title sequence, and the ending shot that pulls back ten kilometers from *Babylon 5*'s observation dome window in one take, required three hours or so per frame for the computers to render. With eight computers running, this represented three hours of real-time to make a film sequence a third of a second in length. Fortunately, computers don't require breaks, sleep, or weekends off.

"There were no Macintoshes used at any stage in the *Babylon 5* FX work," says Mojo. "Some of their 3D software was considered for the show but, in the end, *Lightwave* and the *Toaster* won out. Most of the texture maps were created in *Deluxe Paint IV* and modified in *ToasterPaint*, usually to dirty them down.

"I suppose it is inevitable that some people will think these shots look computer-generated and some will think they look real," he continues. "Some of the work leans one way or the other, but after discussing this ourselves, we decided that what's important is that the stuff looks cool." Anyone care to argue with that?

DOING IT ON THE DESK

When asked about *The Last Starfighter*, another movie that made extensive use of computer-generated special effects for its space graphics, Mojo says: *"The Last Starfighter* was wonderful, but it was done on Cray computers seven or eight years ago. Technology has obviously progressed, and now people can achieve superior results on a desktop level. This is the sort of revolution that Newtek is pushing and Foundation Imaging has been the first out of the gate to fully utilize this new technology."

Talking Shop

Welcome to the Amiga world's liveliest letters pages – where you get the chance to speak your mind. So join your host, the editor, Cliff Ramshaw, for some more no-holds-barred bantering. All you have to do to be included is send your missive to: 'Talking Shop', *Amiga Shopper*, 30 Monmouth Street, Bath, Avon BA1 2BW. Get to it!...

PROGRAMMING PROPOSALS

When you started off the C programming series I was delighted with your proposal to cater for *NorthC* PD users. I'm never going to spend the exhorbitant sum demanded by the other lot so I was already on board on *NorthC* but struggling. So C Programming is greatly appreciated but, if I'm not mistaken, some of the more recent listings have not been *NorthC* compatible. I have managed to get them to work with minor changes but I can imagine that in more advanced programs modifications could be much more difficult. So please could they be made *NorthC* compatible at source?

The 'Assembly time' article in the March issue *[AS* 23] was excellent. Again, I've had a go at this previously and again with limited success. When at the end Paul said "but we'll save these for another time" I optimistically assumed he meant the April issue. Alas, this was not to be! I for one would be pleased to see this as a regular feature. And I could get full use of the a68k assembler on the cover disk!

Ian Mitchell
Troon

You're right about the C series: a slip-up resulted in a couple of listings not being *NorthC* compatible. They all will be from now on.

I'm glad you liked the article on assembly language. We will certainly be running more, and the more positive feedback from people such as yourself, the sooner this is likely to happen.

SHODDY CHAUFFEUR

Flicking through some of the adverts in the magazine, I have noticed many advertisers selling the HP Deskjet 550C. As part of the sales blurb, they mention that the printer has scalable fonts built in and can produce 'crisp' blacks with colour. I would like to inform the readers that this is indeed true... if you've got a PC, that is! Hewlett Packard only supplies drivers for the PC market and as far as I can see it doesn't give a stuff about a few hundred thousand Amiga owners out there. Is there no way we can encourage the company to write a driver for our computer?

I'm lucky enough to own a Vortex 386SX enulator, so I've been able to try the driver that HP supply for the PC, producing wonderful A4 mono and colour printouts with true-type fonts coming out in 5–10 mins. Compare that with muddy green text (composite black) and pages with Compugraphic fonts printed at a rate of... well, let's just say you could go and make your dinner and eat it by the time the Amiga is finished printing. (Remember I'm using a PD(!) HP 500C driver.)

Until the Amiga can get more support from the hardware manufacturers (such as Star, Canon and Citizen) it seems it will never be able to benefit fully from new technology, and hence not gain the respect or credibility from the public and 'serious' computing community that it fully deserves.

Chi Kwong Chiu
Newcastle-Upon-Tyne

It's a fair point, but printer manufacturers, including some of those you mention, *are* beginning to see the benefits of writing Amiga-specific printer drivers. Let's hope more do the same.

IS IT GOOD ENOUGH?

Having for several years toyed with the idea of buying an Amiga for recording FAX and WX satellite images, I immediately saw that the A1200 could be useful.

The claims by the maker of up to 256,000 colours simultaneously on-screen plus excellent resolution were well above anything I required.

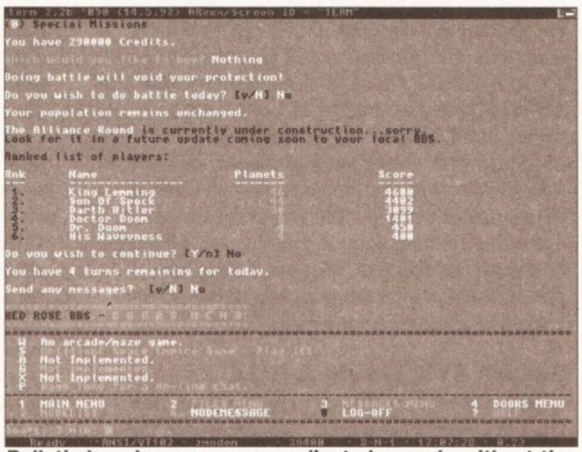
But one other stipulation is that I should be able to program the computer myself for any task, including the above, independently of commercial products.

My existing Spectrum and Electron are capable of being programmed without external add-ons or programs but of course they have only very limited colours and resolution.

I visited two local stockists with a request that they demostrate 256 colours on-screen. This was unsuccessful. I was told that they still did not have the software. I would have thought that, bearing in mind the maker's blurb, the OS should have been capable of doing this. I am rapidly coming to the conclusion that I am wasting my time trying to get real information on the A1200. I hope you will be able to alter my views.

BD Berman
Burton on Trent

The problem you've come up against is, I think, a product of the change that is occurring in personal computing at large. The days are gone when the majority of users buy their machines to spend happy hours programming and tinkering. Sad but true: most Amiga owners, with the exception of many of our readers, are simply not interested in programming. Computers are now sold either as games machines or productivity tools. As such they are no longer supplied with programming languages built in (although the excellent-ARexx language *is* supplied with the A1200), and you have to buy a commercial package if you intend to program the machine to any level of complexity.



Bulletin boards can seem complicated enough, without the worry of having to contribute useful software to them

LEARNING MANUALLY

I have just purchased a new A1200 and was shocked to hear that Commodore doesn't supply an AmigaDOS book with the new A1200. When I phoned the company up I was told it might be bringing one out later.

What is the use of a Shell if you haven't got an AmigaDOS book of commands to use it?

Am I to believe that in its haste to get a new computer on the market Commodore cut corners and thought to sort it out later?

I do believe purchasers of A1200s have been short-changed and wonder if Commodore is going to do something about it soon?

Stu Mackay
Barnstaple

Sad, isn't it? I don't think it's a question of Commodore rushing the machine to market without a manual, but that a decision has been made to sell an AmigaDOS manual separately, just like the other reference books. Mind you, the documentation previously supplied as standard was nothing short of abysmal anyway...

COMMS CON?

Having owned my first modem, a SupraFAXModem V32bis, for a couple of weeks, I am feeling very confused and even annoyed.

When my 14400 baud wonder 'negotiates' at best a 2400 baud connection with one of the many bulletin boards I find myself doing the same thing every time – wading through pages of various menus and message options, desperate to show the 'sysop' that I am not just there to download as many files as I can in the shortest possible time.

However, after managing to exit from the maze of messages, I decide to peruse the file areas and discover there are a few programs I would like to download. I mark the files and prepare for transmission when I am suddenly confronted with the 'upload/download ratio': "You have requested to download 164k but your allocation is 0k – you must upload before you can proceed"!

How and what am I supposed to upload when: (a) I am not a programmer, and (b) what files I have on my disks are either copyright or, if they are PD, the bulletin board is bound to have them already?

I am aware that if nobody ever uploaded files the bulletin board would be a dying concept but surely 90% of the computing population have to rely on the programmers for this? Apart from that I thought the whole idea of public domain meant software that is accessable to *everybody*, not just those who have a good upload/download ratio.

Jonathan Williams
Basingstoke

It's a shame that upload/download ratio restrictions are used. Sure, they're meant to prevent users just logging on to strip BBSs of files and taking up too much of the BBSs' computer time; but as you point out, not every user is able to contribute useful uploads, and those that can would probably do so even if they weren't required to maintain a ratio. Perhaps someone out there can think of a better solution to the problem?

A TRUE HORROR STORY

No, this is not one of those technical letters going on about the SCSI interface or high density drive. I don't care if the damn thing has a DSP or not. I would just like to own an Amiga 1200 that works properly!

My first A1200 had a problem with its modulator – at certain times different colours would flicker across the screen. Also the sound was distorted. I took it back and got another one.

A1200 number two's display did not flicker at all. The quality of output from the modulator seemed much sharper than the old A500 and this was very pleasing, but the sound through the modulator was still distorted. The third time I turned on this machine the mouse would only move left and right.

A1200 number three had the same problem as the first. *Super TwinTris* and the *Light Cycles* demo were the best things to run to demonstrate the problem – the *Super TwinTris* menu screen flickered horribly. The sales assistant gave me another computer and jokingly (I hoped) told me not to come back!

Amiga number four did not have a flickering screen or a mouse problem – but it did have distorted sound. I thought I would see if I could tune the modulator to a different frequency, thinking that perhapsthe distortion was interference on a particular frequency.

I turned the fine tuning screw – ooops! I must have screwed it too far; the tuning screw seemed now detached from anything.

I called the Nottingham branch of the store. The sales assistant gave me the number for Wang so that my computer could be fixed under warranty. I phoned Wang on December 21 and an operator informed me that the engineers normally work on a four-day call-out but, because it was Christmas, I would have to wait a week or so. Two weeks later I called them again. By this time a new telephone queuing system had been installed and it took about 15 minutes waiting before I got through. I arranged for an engineer to come round on Tuesday, January 12.

After many phone calls and much confusion a technician came out a week later. He gave me A1200 number five. He could not change the modulator because Commodore was not shipping parts yet. He also told me that Commodore had changed the modulator design from the early ones because of 'problems'. While he was here we tested out the new computer. On the Workbench screen, before I clicked on it, the blue title bar flickered to purple. The technician took note of this and told me that if it got worse he would change the machine again.

When I loaded *Wordworth* and opened a document the fault showed its face again, now much worse than on the Workbench. The colours change in bands down the screen. For example with a blue title bar you get stripes of purple appearing where there should be blue. The pointer is affected also. This fault also occurs on *PageStream 2.2* and I would guess on many Workbench applications.

Wang has since brought round four new A1200s and all these have exhibited the same fault. Two of my friends have 1200s and they too have the same fault. It may still be a modulator problem but I do not have a monitor to test the programs on. I hope you can investigate this and get a solution from Commodore to what seems like a very serious problem with the Amiga 1200.

David McCormick
Hatfield

I'm sorry to hear you've had so much trouble, David. You're not alone – turn to page 7 for the full story.

GETTING TOGETHER

As one of the many over-50s who is no longer in employment, I bought an A500 Plus as a way of keeping the grey matter alive and to use for adding titles to my video films. My main interest has always been films and for over 30 years I dabbled in home movies until a few years ago when I bought a camcorder, followed by an Amiga last year.

Although I feel I am doing reasonably well, there must be many people out there who are in a similar position to me: with lots of time on their hands, an Amiga, and constant headaches in trying to get to grips with it. Your magazine is excellent and covers a wide range of subjects but it can be frustrating for those of us who are venturing into a subject that is mindblowing for first-timers of our age but comes naturally to a generation younger. What is required is a simple method of discussing problems, exchanging tips and information and general Q & As sessions designed for newcomers.

I have been unable to find any evening classes devoted to the Amiga and even the DSS office could not find a class on computer graphics. It seems that there is a real need for us crumblies to band together and play our own tunes.

So what about it? Are there any of you out there who have reached the Big 50, live within a reasonable radius of Coulsdon in Surrey and feel that you would like to get involved in forming a group with other Dinosaurs?

If so, drop me a line and let's get cracking. All correspondence will be answered. Look forward to hearing from you.

Frank Barron
2B The Wend
Coulsdon
Surrey CR5 2AX

Good luck!

NUMBERLESS AS THE WINGS OF TREES

I'm appealing to all you PD programmers out there. Develop a word counter utility that will work on any file created by any Amiga word processor program. A facility such as this would save a lot of time and be more economical than producing a printout to see how many words you've done, plus it would always be more accurate than an estimated guess.

Julie Thompson
Stockton-on-Tees

Such a task shouldn't give a programmer too much trouble, should it?

UNTO THE DUSTBIN

It would seem that the Amiga is now finally consigned to the business dustbin.

Following the changes in VAT regulations on 1 January 1993 I asked someone at Digita whether or not they had plans to upgrade their products in line with the new rules. They informed me that they had no plans to do so.

I am not aware of any other software company supplying this area, so it would seem that this sounds the death knell. What are your feelings about this? Is there any hope for the future of the machine in this market?

Malcolm Hyland
Leamington Spa

I think you're right: the Amiga *is* losing ground in the business marketplace. With the proliferation of ever-cheaper PCs, it's inevitable. Nevertheless, it doesn't mean the end of the Amiga's life as a professional computer: every day we hear stories of its success in broadcast video and related fields. But the chances of high-quality business software such as that enjoyed by Mac and PC users ever making an appearance on the Amiga are certainly diminishing.

TEDIOUS UN-ARCING

I am sure I am not the only reader who finds the un-arcing of your cover disk files tedious and prone to the mis-typing of commands.

Could you please consider using *PowerPacker*, which can be used quickly and simply to compress, decompress and re-direct files with a click of the mouse button?

Grahame M Ross
Ayrshire

Bowing to popular pressure, we've re-vamped the format of the *Amiga Shopper Shareware Collection*. I'm sure you'll agree it's now a breeze to use. Turn to page 26 for details of this month's disk. AS

Every word processor has some features that set it apart from the competition. It might be better at printing, it might import and export more file formats, it might support more fonts, it might do something none of the others can do. This package-by-package section covers nine of the major word processor packages in turn, highlighting the major advantages and disadvantages of each.

BEGINNERS START HERE

WHY A WP?

Why do you need a word processor at all? The answer to that one's obvious – to write with.

So why not use a typewriter? Or longhand? After all, many millions of books have been written without the aid of a word processor. Do you *really* need one?

Yes, you do. Even if it's only to write letters. OK, when writing to friends and relations it isn't particularly important to impress, but a stylish, well-presented letter can make the world of difference when writing to the bank manager or when applying for a job. Or even when writing to *Amiga Shopper.*

The problem with writing things out longhand or with using a typewriter is that you have to start at the beginning and go on until you get to the end. If, when reading through what you have written, you discover that you've left something out, put something in the wrong place, constructed a paragraph or sentence poorly, spelled a word incorrectly... you have to start all over again and re-write the whole page, or maybe even the whole document.

With a word processor you simply load the file and correct it.

So word processors save you time. And they can also improve the quality of your writing.

Because you can cut-and-paste sections of text around a document, you are not forced into presenting what you have written exactly as you typed it in. For example, you can bash out ideas, sentences and paragraphs as fast as they come into your head, then go back and expand on them, then move the sections into a sensible order. If it doesn't all hang together, then you can change something, try out a new idea or mess around until inspiration makes one of its fleeting visits.

Sounds disorderly, I know, but this approach is a recognised way of generating new ideas. It's called 'being creative'.

After you've written your piece you can use the layout facilities of the word processor to prepare and subsequently print out the pages in a professional or eye-catching style. Some word processors enable you to include graphics on the pages, so you can brighten up business reports or newsletters with diagrams and graphs.

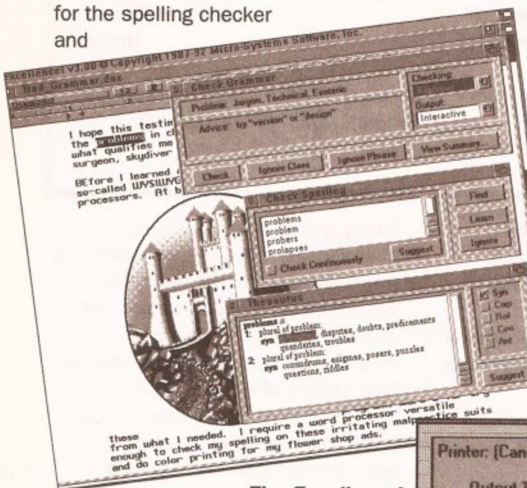
MORE NEEDS

If you are going to spend a serious amount of time word processing, then you are going to need more than just a standard Amiga. While your computer will work happily with the spare TV, sitting up close staring at that poor-quality screen for hours on end is going to end in tears. Not tears of frustration, but tears of pain.

EXCELLENCE!

The most obvious areas in which *Excellence!* excels are the spelling checker, thesaurus and grammar checker. Now the blurb in the advertising and on the packaging claims a 140,000-word dictionary and a thesaurus containing 1.4 million cross references. These numbers are... shall we say, optimistic. *Excellence!* comes with the same British 103,000 word Collins/Proximity dictionary and the same 470,000 cross reference Collins/Proximity/Merriam-Webster thesaurus as *Scribble!*. The *Excellence!* blurb is talking about the US versions of the dictionary and thesaurus. Naughty.

Nevertheless, the user interface for the spelling checker and thesaurus is superb. Both windows may be open on the screen at the same time, and you may continue to work on your document(s) while these windows are open, although because of the size of the windows this is practicable only on a High Res Interlaced display.



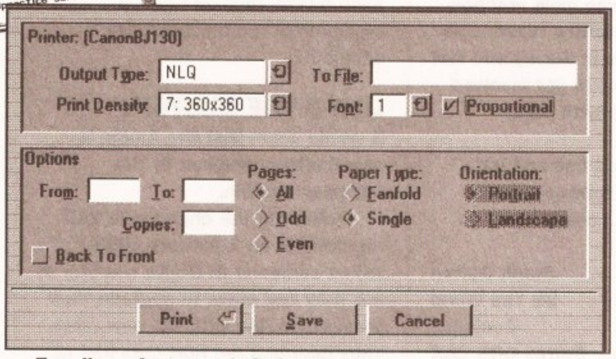
The *Excellence!* thesaurus, spelling checker and grammar checker can all be open at the same time, and you can even leave them open while continuing to work on your text. Excellent!

The spelling checker works quickly and doesn't make a big deal out of the job like some others do. The thesaurus, likewise, provides you with a scroll bar which helps you quickly find the word that is on the tip of your tongue; double-clicking on a synonym inserts it into the document, replacing the old word.

Both windows are small enough to be moved around so you can see the word in context in the document.

The grammar checker is unique to *Excellence!*. While such a feature is of limited use, often dishing out vague or irrelevant advice because it has taken a word or phrase out of context, more often than not it could improve the readability of your documents.

One of its most useful functions is to point out instances where you have used passive verbs, a style of writing that can quickly become tiring to read. The database can recognise almost a thousand common grammatical errors. Such a shame there is no documentation about adding to it, although it is quite plainly possible to do so.



***Excellence!* can use built-in printer fonts, though only one per document – you simply select a font number in the Print requester**

For editing and layout *Excellence!* is a perfectly adequate word processor with a rather natty 3D user interface. Its graphics handling is a little quirky – it treats each imported picture as if it were a very large text character – but again it is perfectly adequate for incorporating a company logo at the top of a letter or a few simple business graphics.

The area in which *Excellence!* does not live up to its name is printing. While it will happily import Workbench-style Compugraphic outline typefaces, at output time these are printed as bitmaps, just like normal Amiga bitmapped fonts, so all text output of screen fonts from *Excellence!* is jaggy. Internal printer fonts may be used, but only one per document – the Print requester has a gadget that enables you to select a font number. You can of course apply different styles to printer fonts – bold, italics and so on – provided your printer contains that font in that style.

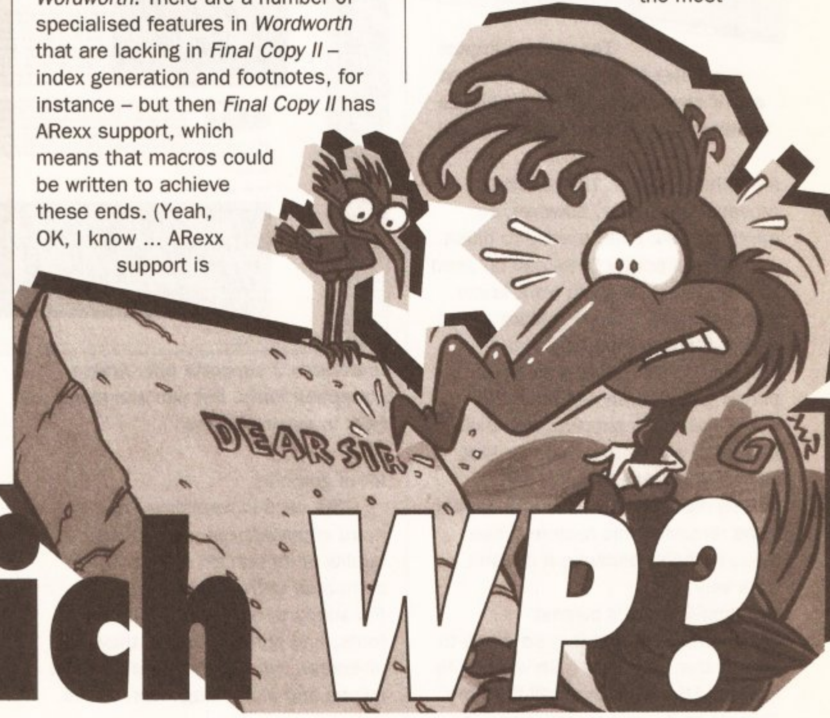
With improved graphics handling and better quality Compugraphic typeface output, *Excellence!* would be up there with the best. As it stands, perhaps it should be renamed *FairlyGood!*.

FINAL COPY II

Final Copy II is based totally on outline typefaces and is the first Amiga word processor to have the courage to insist that bitmapped fonts, as plentiful as they may be and as quick as they are for screen display, simply don't cut the ice when it comes to print time, so they aren't even worth supporting.

The first release supported only SoftWood's own 'proprietary' typeface format, which is faster at displaying and printing than the standard Amiga Compugraphic outline typeface format while retaining the same high-quality output. No problem here, except that if you want more SoftWood typefaces you have to pay commercial prices. Release 2 of *Final Copy II*, which turned up only in the last month, also supports PostScript Type 1 typefaces, which means you can now use thousands of inexpensive but high-quality PD and shareware faces.

No other Amiga word processor works with PostScript Type 1 typefaces, so this is a feather in *Final Copy's* cap. However, the catch is that the program doesn't work with internal printer fonts. There's a Draft printout feature to enable you to get some quick hardcopy for proof-reading or for simple letters or documents, but for printing the 'final copy' only outline typefaces are used. These are printed as graphics,



Which WP?

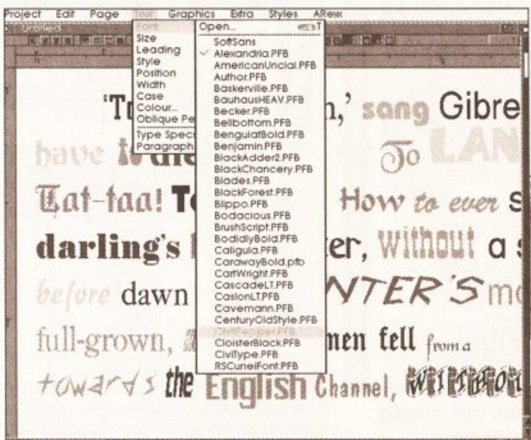
Step out of the stone age and process your words! Jeff Walker compares nine top WP packages

so you'll have to wait a bit for pages to print, but the results are stunning, even from 9-pin and 24-pin dot-matrix printers, and especially so if you're using inkjet and laser printers.

PostScript printing is supported, both in mono and colour, and any Type 1 typefaces that are used in your document are automatically downloaded with the file at printout time.

Final Copy II contains many features that almost raise it into the desktop publishing class. It boasts proper style tags, for instance, that rival the system used by *Professional Page.* And graphics can be sized and positioned very accurately by entering measurements and coordinates into a requester. Then there are the structured drawing tools for creating lines, boxes and ellipses, in any colour, filled or unfilled. Imported ILBMs – graphic images created in, say, a paint program – may have borders of up to 12 point weight around them (about 5mm), in any colour.

And there's depth – imported ILBMs and graphics created within *Final Copy II* can be 'sent to the back' or 'brought to the front', just like arranging Amiga windows, making it easy to overlay any graphic with any other graphic, or with text come to that. Other word processors that import graphics either don't allow overlapping graphics at all or simply plonk the latest imported graphic on top of previous ones, so you have to be sure to import them in the correct order. OK, not a problem everyone runs into, but another illustration of how DTP-like *Final Copy II* is.

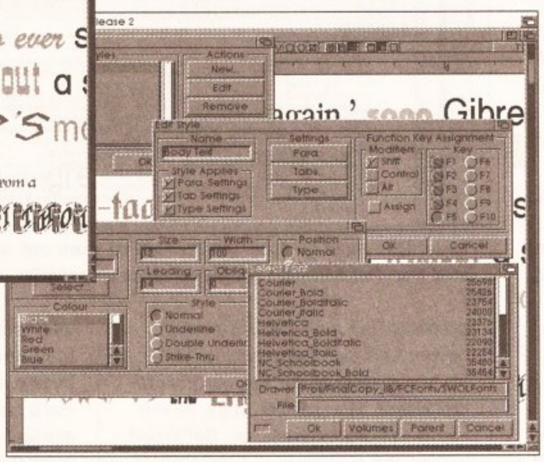


Release 2 of *Final Copy II* includes support for PostScript Type 1 outline typefaces, and these are printable to all types of printers including dot-matrix

Although it doesn't yet directly support the AGA chipset, *Final Copy II* will import any ILBM, even 256-colour, HAM8 and 24-bit ones. It cuts down the number of colours for screen display purposes, 16 being the maximum, but at printout time the colours of the original graphic are used. For the life of me I can't imagine why you'd want to word process in 256 colours, but if this is important to you, then you'd better look elsewhere.

Final Copy II has one rival, *Wordworth.* There are a number of specialised features in *Wordworth* that are lacking in *Final Copy II* – index generation and footnotes, for instance – but then *Final Copy II* has ARexx support, which means that macros could be written to achieve these ends. (Yeah, OK, I know ... ARexx support is only useful if you're into programming.)

If you find yourself stuck between whether to buy *Final Copy II* or *Wordworth* then ask yourself this question: do I want the WP to support the non-scalable bitmapped fonts built into my printer? If the answer is yes, look at *Wordworth;* otherwise take a long, hard look at *Final Copy II* because you might find that it will suit your needs better.



Final Copy II's style-tagging system is more comprehensive than the systems found in some so-called professional desktop publishing programs

KINDWORDS 3

Although *KindWords 3* is aimed fairly and squarely at the Amiga user who is new to word processing, the manual is precisely 32 pages small and is nothing more than a quick description of the menus and buttons. There's not even an attempt to teach you how to use the program, and the UltraPrint feature, which is the most complicated part of the program, is described in an unbelievably skimpy 10 lines.

Being a slightly cut-down version of *Wordworth* v1, *KindWords 3* is an inexpensive choice for the user who wants to mix text and graphics in the same document while retaining a fairly high quality of printout. Only Amiga bitmap fonts are supported, but the UltraPrint feature is able to get rid of the bitmap 'jaggies' – the jagged edges you see on curves when you use bitmap fonts at a large size – by printing with a font four times the size of that on the screen, scaling it down in order to get a

You will eventually begin to suffer headaches. You need a monitor.

If you want to print your documents, then you need a printer. Do not rush into this decision. On no account buy any old printer – including that second-hand 'bargain' from the bloke down the pub – until you know for certain that there is an Amiga printer driver for it. How do you find this out? Simple. Ask to see it working with an Amiga. Make sure that it prints both text and graphics without any spurious characters appearing in the output.

Make sure the quality of the output is up to the standard you need. Don't be fobbed off with the excuse that the printer is capable of far higher quality output than the person selling the printer can demonstrate because he is inexperienced with the Amiga.

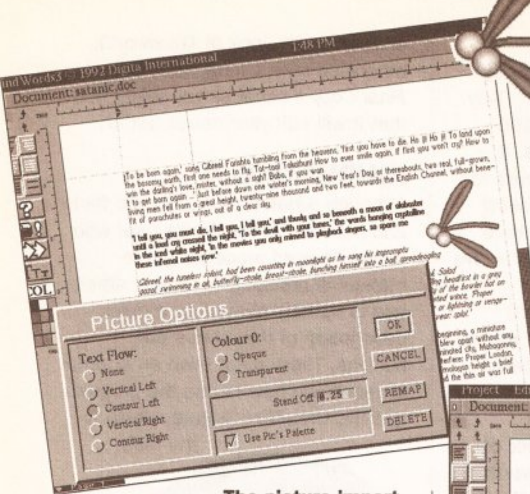
If the person selling you the printer can't make it work properly, don't assume he is stupid, assume that the printer doesn't work.

Just as important as a good monitor and an adequate printer is a second floppy disk drive. Even if the word processing system you choose can run from one disk – and some can't – you will want to save your documents on to a separate disk. With a single-drive system you will be forever swapping disks, which very quickly becomes tiresome.

Most important is extra memory. Although some Amiga word processors will work with only 512k, after they have loaded they will leave precious little room in memory for your document. Spell-checking? Forget it, unless the spelling checker is a separate program.

At the very least you should consider expanding to 2Mb of total memory. And 1200 owners, who already have this amount of memory, should seriously consider buying one of the new trap-door expansion boards specifically for their machines because this alone will double the speed at which the 1200 operates.

If you're really serious about your word processing and you've got some savings put by, then a hard drive is going to transform your slow, floppy-munching, glorified games machine into a helluva serious productivity tool. With a hard drive attached everything – absolutely everything – becomes so much easier to work with and understand.



The picture import requester in *KindWords 3* is just about simple enough for a child to understand. A clever child, anyway

smoother printout. This scaling process takes time, however, so printouts take quite a while to finish.

Internal printer fonts can be used to a degree should you want faster printing, and a special feature allows printer fonts to be mixed with graphics on the same page if your printer can reverse line feed. I've never had much success with this feature in any word processor that claims to be able to do it, and indeed most word processors appear to be removing this feature these days, probably because it doesn't work very well.

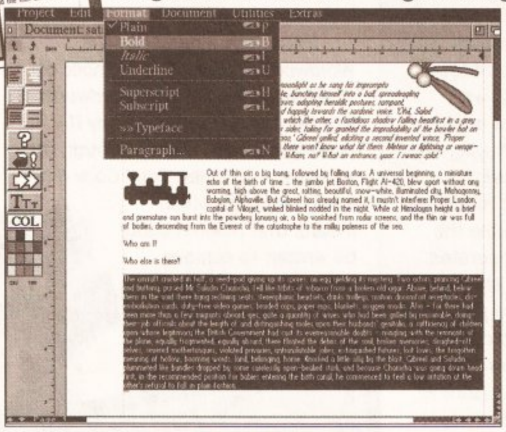
KindWords 3's biggest disadvantage is that it is so pretty to look at that you can't help wanting to run it in 16-colour mode all the time. This slows it down terribly and eats memory like there's no tomorrow. What a pain to be told after spending a while creating some beautiful pages that there isn't enough memory left to print the document, which was actually the whole point of the exercise.

So although 1Mb is the recommended minimum amount of memory required, the last page of the manual is dedicated to telling you what to do when you run out of memory, which advice basically amounts to recommending that you use a low resolution screen in two colours and don't load any pictures. Gee thanks. Better advice would be to buy some more memory if you have any aspirations to using the program for more than very basic text-crunching.

KindWords 3 is a cheap and cheerful word processor, and would be a good introduction for a child to modern word (or 'document') processing. The lack of proper documentation means that mummy or daddy will have to turn teacher for a while, but that's what it's all about, isn't it? If mummy or daddy needs teaching as well, then perhaps you ought to look at *Pen Pal.*

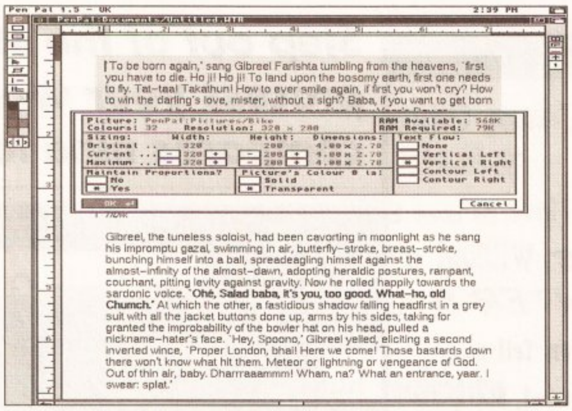
PEN PAL

Pen Pal has two great weaknesses. The first is that is has never been a very stable program, tending to crash or freeze the computer suddenly for no apparent reason. It doesn't do this a lot, but often enough for it to become annoying, particularly if you are using a lot of fonts and a lot of graphics.



KindWords 3 supports only Amiga bitmapped fonts, but you can use them in several styles

The second weakness, and a more important one, is that the quality of its printed output is poor compared to the competition. *Pen Pal* supports only Amiga bitmapped fonts, and prints these as they are on-screen, with jagged steps around curves and along diagonals. We've probably had more letters asking how to improve the quality of *Pen Pal's* output than for any other word processor. The answer, alas, is you can't. *Pen Pal's* publisher, SoftWood, is also the publisher of *Final Copy II,* with scalable outline typefaces that produce excellent printed output at all sizes, so I guess there's not much chance of *Pen Pal* ever being upgraded to do the same.



You might need to read the manual to work out exactly how *Pen Pal's* Import Graphics requester works

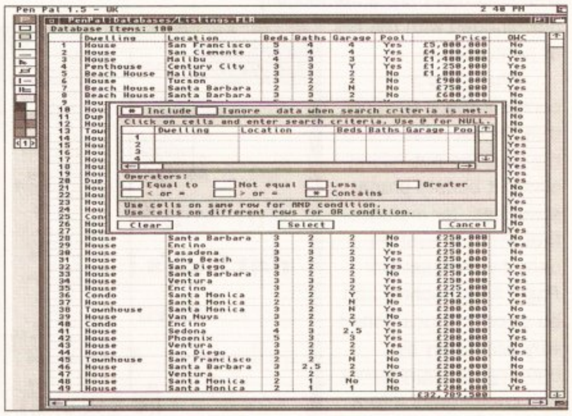
On the plus side, *Pen Pal* has an extremely good user interface, easy to learn, easy to use, perfect for beginners or children, and it even includes some drawing tools to enable you to create lines and filled and unfilled boxes. Graphics are printed in their original colours rather than from the eight-colour screen representations of them.

The other plus about *Pen Pal,* and a fact that isn't always made clear in adverts, is that it has a built-in database. It's a fairly simple non-relational database, but plenty good enough for jobs like keeping client lists, membership lists and mail merged address labels.

Another businessy extra is the 'forms' feature. This enables you to create a blank business form – an invoice. Selecting the Forms Fill In option steps the cursor through each of the fields in the form in turn for you to fill in the details.

Pen Pal can print using your printer's internal fonts, but like many Amiga word processors it permits you to use only one printer font per document, and if your printer has many built-in fonts there is no way to select a font number from within the program, which means it has to be selected prior to printing from the printer's control panel and made the printer's 'default' font.

Pen Pal's main rival is *KindWords 3;* both are aimed at newcomers to computing and/or word processing. It's a tough choice, but *Pen Pal's* excellent manual probably gives it the edge.



Here's something *Pen Pal's* got that no other word processor can offer you – a full-fledged database

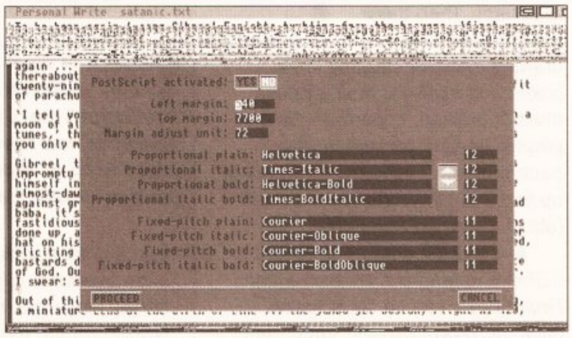
PERSONAL WRITE

For a 'budget' word processor, *Personal Write* contains some surprisingly powerful features – PostScript support, for instance. OK, it's just for text, but you can define the names of the four proportional and four fixed-width typefaces it should use – plain, italic, bold and bold italic of each – and can also specify the point size of all eight typefaces. However, there's no WYSIWYG font support, so it may be difficult to match the on-screen appearance of a document with the printed output.

Personal Write also boasts an impressive collection of built-in character sets, including IBM PC, Macintosh, Atari ST and a number of foreign ones. It supports the ANSI standard as well as ASCII, so you can save documents with style commands for colour, bold, italics and so on embedded within them. Many text viewers (such as *More)* support ANSI style commands, so *Personal Write* provides an easy way of producing nicely-presented documents that are to be read from the screen as well as printed.

Personal Write's keyboard short-cuts are for the most part based on the function keys, and they work as toggles – one press turns a feature on, a second press turns it off. If you can get used to it, this can be a very fast way of working.

Personal Write also enables you to use ANSI printer control codes in order to change fonts, colours and stuff like that. It's not explained particularly well in the manual, which is translated from Italian and is the



You don't expect to find PostScript support in a £30 word processor, but *Personal Write* gives you a certain amount of control

most boring and confusing manual you're ever likely to read (160 pages of it!), but if you're willing to plough through it and experiment you'll probably get there in the end.

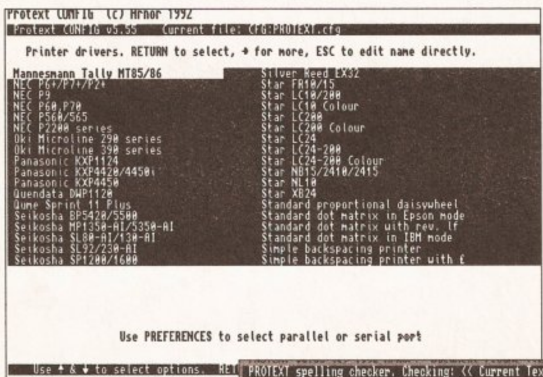
There's a simple mail merge facility, which is actually a lot easier to understand and use than most others. It even has a 'manual' feature which puts up a requester with empty gadgets to fill in for each 'label' that has been defined. It wouldn't be too difficult to create a simple invoicing system with this, although there's no maths facility, so you'd have to enter totals by hand.

A simple Load Picture option imports an IFF-ILBM graphic into a separate window and allows you to scroll it left and right to position it on the printout. The only real use for this is to print a logo or something similar at the top of a page before printing the text.

Personal Write's rivals are *TransWrite* and *Scribble!*. Although these cost slightly more, they do come with spelling checkers, and *Personal Write* doesn't. But then they don't have PostScript support.

Probably *Personal Write's* biggest drawback is the lack of text justification features – left-aligned text is all it does, there's not even a 'centre line' option. But then it is able to automatically correct some typing errors like not inserting a space after punctuation, correcting uppercase letters in the middle of words and signalling when you've typed the same word twice.

All in all, a bit of a curate's egg.



***Protext* uses its own style of printer drivers and comes with drivers that will work with hundreds of printers**

PROTEXT

Protext's greatest strength is its sheer word processing power. But big programs take a while to learn how to use, and *Protext* is a bigger program than it at first appears.

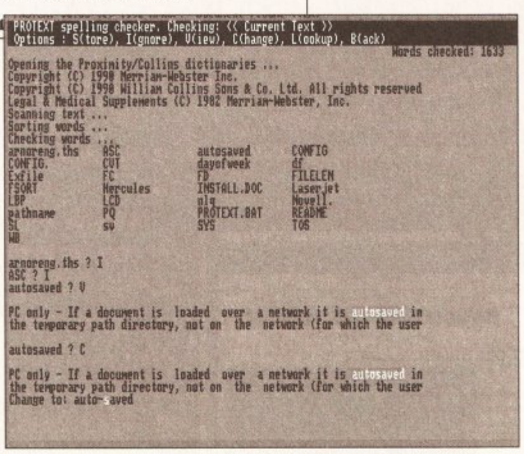
In the first place, it gives you literally complete control over your printer: *Protext* uses its own proprietary printer drivers, and you can modify those supplied or create your own from scratch, as well as embed printer-specific control codes in documents, all of which means that if your printer has a control code that enables it to fly to the moon, *Protext* can instruct it to fly to the moon. No other Amiga word processor can do this.

Protext comes with printer drivers that will work with a couple of hundred or more of the popular printers, new and old. If there isn't a *Protext* driver that works in one emulation or another with the printer you own, you can count yourself as pretty unlucky. But even then, armed with the printer manual you can write your own – not everyone's idea of a fun way to spend a rainy afternoon, but at least you have the option.

Then there's the mail merging language, otherwise known as 'stored commands'. This language is incredibly powerful – so powerful that you could write a fairly professional invoicing system or a database with it. Among many other features, it includes maths support, ifs and elses, variables, looping, and commands to get input from the user or from file. Using these stored commands is similar to programming in BASIC, and it is this that puts many people off. But remember, you don't have to use it.

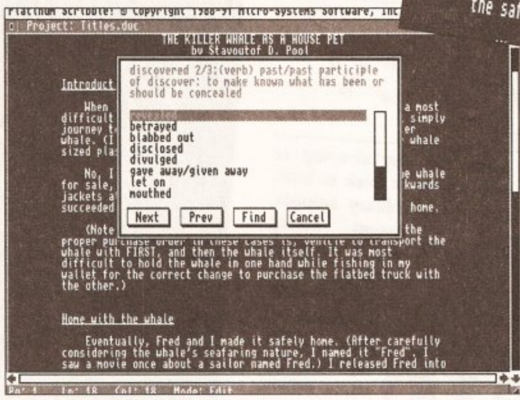
Protext is also very configurable, with a large Config program that again scares the hell out of beginners. It's not that it's complicated, it simply that there's so much of it.

Naturally, the manual for such a powerful program is large – almost 400 closely-typed pages. If you feel you shouldn't have to read *War and Peace* just to type a few letters, then *Protext* is not for you.

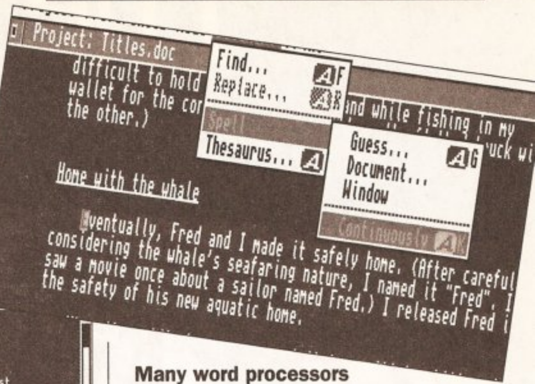


The *Protext* spelling checker has a 'batch' mode that helps speed up the correction process

Although almost everything can be selected from menus, the program is also command line driven. I don't mean from the Shell or CLI, I mean it has its own command line and its own set of commands. One of the advantages of this is that you can build scripts of *Protext* commands and 'execute' them. For instance, if you find yourself typing the same words or phrases over and over, you could just type abbreviations instead and set up a single 'exec' file to go through your text replacing the abbreviations with the proper words – it could search for the string 'wb', say, and replace it with 'Workbench'. OK, you could use the search and replace feature of any WP to do this, but a single *Protext* 'exec' file can translate many such abbreviations in one sweep – quite a time saver. The only other Amiga word processor able to do this is *TransWrite*.



The *Scribble!* spelling checker and thesaurus is the same one that comes with *Excellence!*, but with a less flashy user interface



Many word processors can check spelling as you type, and *Scribble!* is no exception

If your main use for a word processor is to bash out words, then the sensible choice is between *Protext* and *TransWrite*. If you are also prepared to learn about control codes and want total control over your printer, *Protext* is unbeatable, the *Protext* manual itself being a good example of what can be achieved using the program.

SCRIBBLE!

In the last word processor roundup in *Amiga Shopper*, way back in issue 6, the current version of *Scribble!* was v3.05. October 1991, that was. So I was absolutely staggered to discover that 18 months later the current version of *Scribble!* is still 3.05.

Scribble! is a bit of a mediocrity. There's nothing it does that one rival WP or another doesn't do better. For instance, it has a stored command language which can be used, among other things, for mail merging and

JARGON BUSTING

ANSI – A standard format for text set down by the American National Standards Institute. Compare ASCII.

ASCII – American Standard Code for Information Interchange. Probably the most widely accepted standard for storing plain text so that it can be exchanged between computers.

Bitmapped fonts – A system that builds characters up out of pixels or dots on-screen. See 'jaggies'.

Font – Another term for a typeface or a particular design of text. This is Franklin Gothic; this is Times.

ILBM – Interleaved Bit Map. The standard format in which graphic images are saved by art and graphics programs on the Amiga.

Jaggies – The jagged edges you get on curves and diagonal lines when you enlarge bitmapped text.

Justified – Typesetting term for text that is aligned at the edges, most often at both left and right margins.

Outline font – A system that stores instructions for drawing text rather than bitmap images of it; can be scaled to any size without jaggies.

PostScript – A standard 'page description' system used by several different kinds of printers.

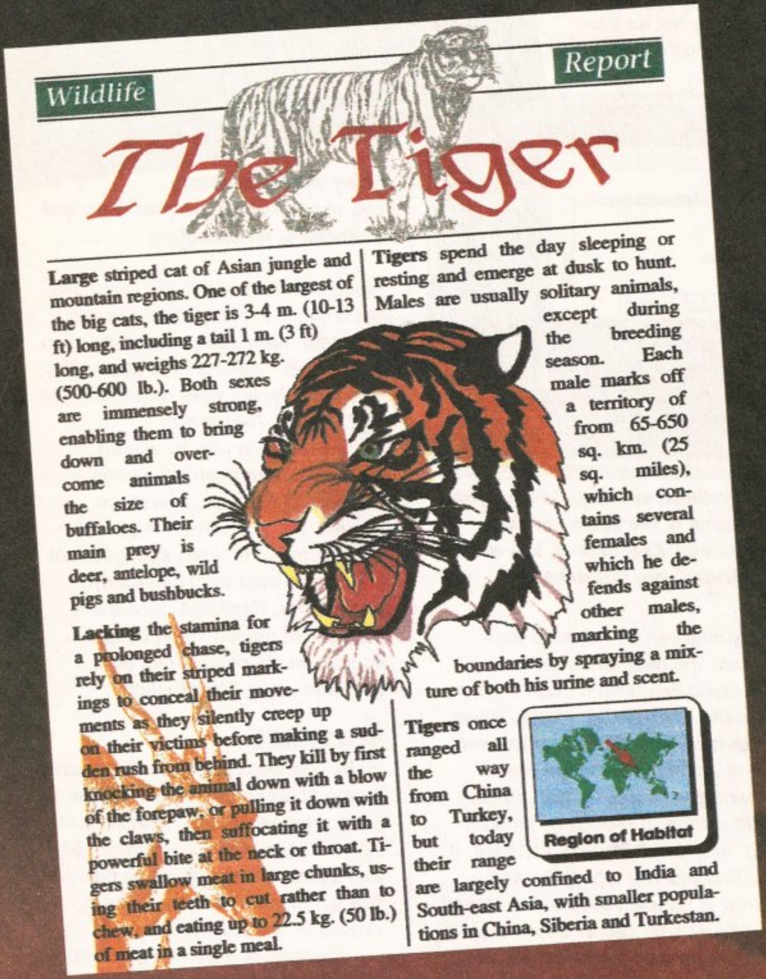
Printer drivers – Small programs that translate your WP's printing instructions for specific printers.

Type 1 – A type of bitmapped font.

Widow/orphan – A widow is a single line of a paragraph at the bottom of a column. An orphan is one at the top. (Or is it the other way round?)

WYSIWYG – What You See Is What You Get. Means the screen display looks like the printed output will.

The Best Word Publish
(Amiga Forma


Wildlife Report

The Tiger

Large striped cat of Asian jungle and mountain regions. One of the largest of the big cats, the tiger is 3-4 m. (10-13 ft) long, including a tail 1 m. (3 ft) long, and weighs 227-272 kg. (500-600 lb.). Both sexes are immensely strong, enabling them to bring down and overcome animals the size of buffaloes. Their main prey is deer, antelope, wild pigs and bushbucks.

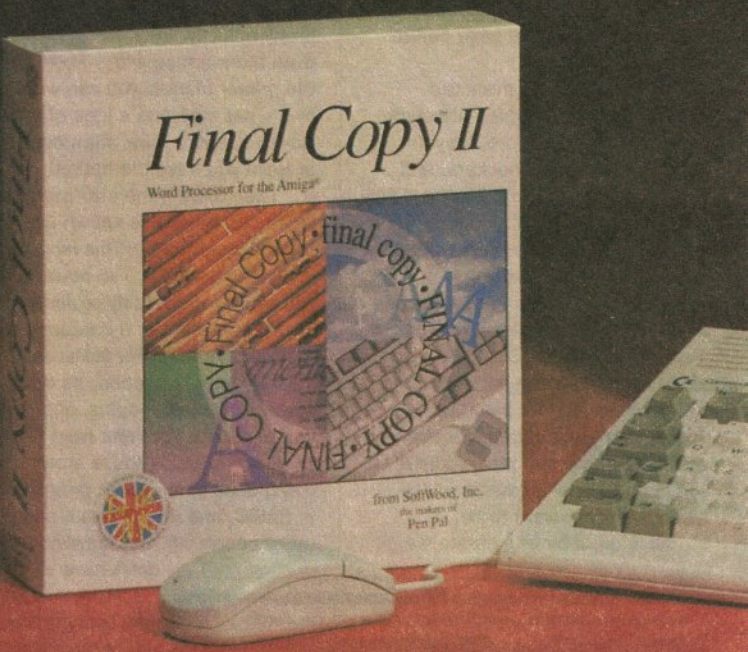
Lacking the stamina for a prolonged chase, tigers rely on their striped markings to conceal their movements as they silently creep up on their victims before making a sudden rush from behind. They kill by first knocking the animal down with a blow of the forepaw, or pulling it down with the claws, then suffocating it with a powerful bite at the neck or throat. Tigers swallow meat in large chunks, using their teeth to cut rather than to chew, and eating up to 22.5 kg. (50 lb.) of meat in a single meal.

Tigers spend the day sleeping or resting and emerge at dusk to hunt. Males are usually solitary animals, except during the breeding season. Each male marks off a territory of from 65-650 sq. km. (25 sq. miles), which contains several females and which he defends against other males, marking the boundaries by spraying a mixture of both his urine and scent.

Tigers once ranged all the way from China to Turkey, but today their range are largely confined to India and South-east Asia, with smaller populations in China, Siberia and Turkestan.

Region of Habitat

We'd simply call it the best Amiga Word Processor. But if after using it, the experts insist on calling Final Copy II the best Word Publisher as well, we're not complaining!

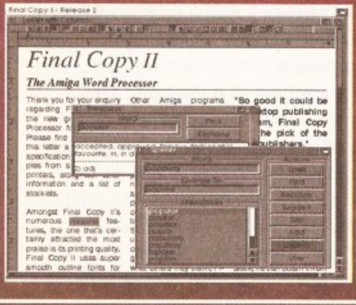


Final Copy coined the phrase "Perfect Printing on **any** Printer". We mean it - this document proves it!

Created in Final Copy II and printed on a standard 24-pin Citizen Swift, it shows a small number of Final Copy II's features: Smooth Scaleable Outline Fonts, Multiple Columns, Drawing Tools for Boxes, Borders, Shadows, Lines and Arrows, White-Out Text, Text Printed over Graphic Images, Text Obliquing, Auto-Flow Text around Graphics and of course, Import of Colour and Mono Graphics Pictures.

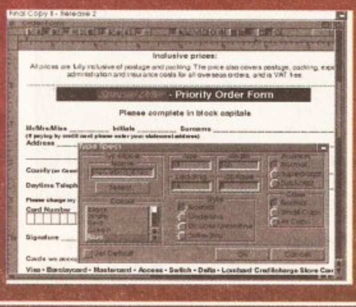
Final

Word Publishers go beyond simply producing normal letters and documents (at which Final Copy II naturally excels) and progress into a world where *how the whole document looks* is just as important as *what it says*. Admittedly, this can be achieved with Desk Top Publishers, but they can't easily be used as Word Processors, especially when a good looking letter needs creating quickly - they're far too cumbersome. This is where Final Copy II offers the perfect balance between the two requirements. Ease and speed of use, combined with complete control and perfect final printed presentation.



Document creation is so simple with 28 On-Screen Buttons for routine formatting and navigating commands, like Auto-Hyphenation. With *true* WYSIWYG display, you can even edit whilst your pages are magnified up to 400% (or reduced). Long documents are supported with Title/Master Pages, Style Sheets, Left/Right Page Binding Offset and Auto Numbering. Because your text needs to be perfect, the British-English Collins Proximity Speller combined with the Thesaurus (for that added inspiration) help you to produce the precise, printed page.

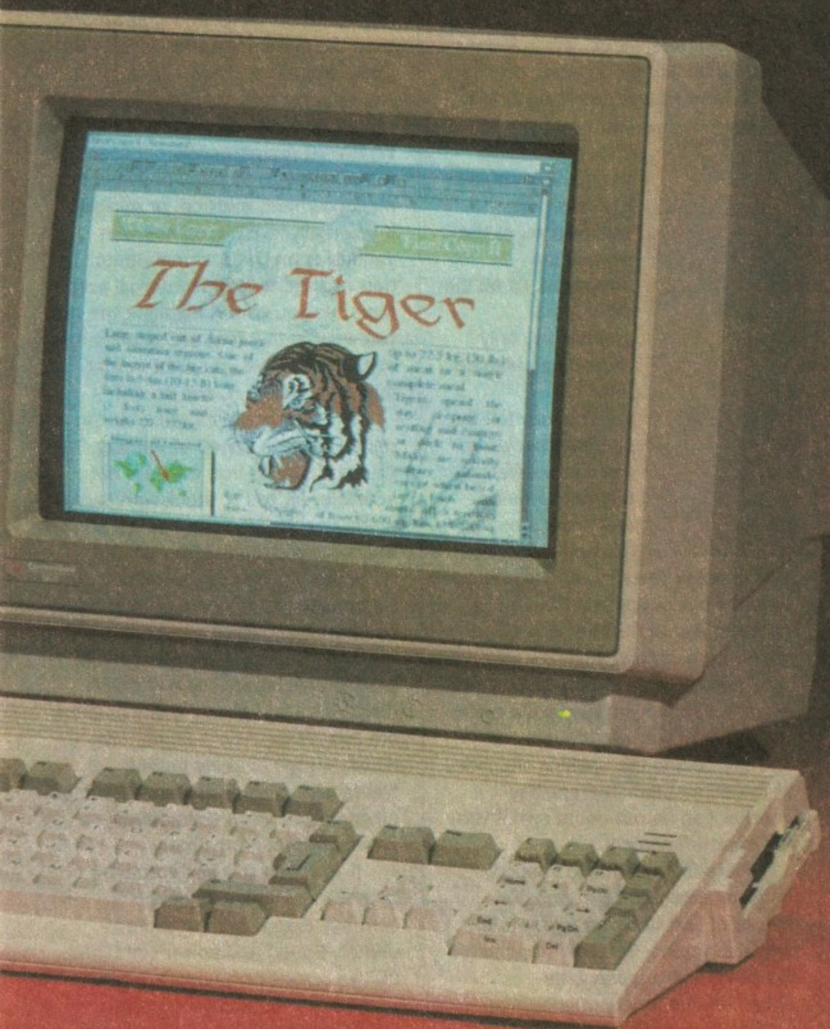
Compugraphic, Adobe Type 1 PostScript or Nimbus Q PostScript? If you *want* lots of font you can *have* lots of fonts! Final Copy II can use thousands of superior Adobe Type 1 or Nimbus fonts (the same as those used on professional publishing systems). Both these types are PostScript font but unlike all other Word Processors you don't need an expensive PostScript laser to use them! Fin Copy II *will* print them on PostScript lasers, *or* any graphics capable printer. This includes the do matrix or ink-jet you probably already own. Even if you have your own Compugraphic* font librar you'd still like to use, Final Copy II is fully compatibl outputting to any graphic printer. Final Copy II unrivalled in its range of fonts supported, and as you ca see here, you have complete control over text formattin When using the outline typefaces included, or an additional fonts, they'll output perfectly† - no matter wh size they're scaled to - with absolutely *no* jaggie Opening multiple documents also allows editing whil printing in background mode (free memory dependent).



Compatible with all Amigas from A500 to the latest A1200/A4000 ranges with either a second floppy or a hard drive. A minimum of 1Mb. of available free RAM is required (A600 hard drive - 1.5Mb.) however, as with all advanced graphical programs, extra memory (eg. 1.5/2Mb. - the more the better) will be required to exploit all features fully.

Available from all good Amiga Software Dealers, or from SoftWood Europe - please phone for a list of nationwide stockists.

ng Program of its Type
s words not ours)



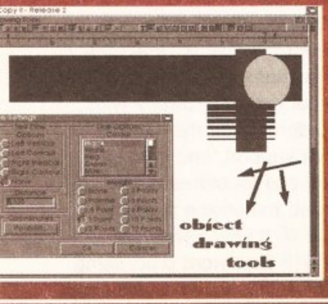
Amiga Format think we have the Best Word Publisher. We'll show you why with a list of features that users tell us are important (below).
If you'd like to know who's also chosen Final Copy, Commodore specify it as an option with some of the most powerful Amigas available in the United States. What better recommendation could you have?

	Feature	Wordworth 2	Final Copy II
Fonts and Printing	Compatible with Standard Amiga Workbench 2 Compugraphic Fonts	YES	YES, But would Suggest use of Better PostScript Fonts
	Compatible with Standard Adobe Type 1 and Nimbus Q Scaleable Postscript Fonts	NO/NO	YES/YES
	PostScript Font Outlines on all Printers	NO	YES
	Maximum Number of PostScript Fonts	Limited to a total of 35	Infinite
	Download Extra Fonts to PostScript Printer	NO, Can't download extra fonts	YES, Automatic
	Landscape (Sideways) Printing on all Printers	NO	YES, Automatic
	Reclaim Printing Resolution (Quality) of Scaled (Reduced and Enlarged) Graphic Images	NO	YES, Same High Quality when Reduced and Enlarged
	Print any Text or Graphic in Colour	YES	YES
	No. of Colours Printed in Imported Pictures	Limited by Screen Mode Used	Output as Original Image
	Graphics Printing (HAM & IFF ILBM)	Good if Graphics not Scaled	Always Best Possible
	Text Width (Compress and Expand)	NO	YES
	Variable Text Obliquing (Slanted Text) Both Positive and Negative Attributes	NO	YES
Graphics	Box, Rounded Box, Circle, Oval, Line, Variable Border & Arrow Drawing Tools	NO	YES
	Crop (Trim) to Size Imported Graphics	NO	YES
	Supports A1200/4000 AGA Chipset	YES, 256 On-Screen Colours	YES, 256 On-Screen Colours
	Create Border around Graphics and Pictures	NO	YES
Editing and Formatting	British-English Spelling Checker	YES, Collins Proximity with Legal & Medical Supplements	YES, Collins Proximity with Legal & Medical Supplements
	British-English Thesaurus	YES, Collins 826000 Synonyms	YES, Collins 826000 Synonyms
	Page View Magnifications and Reductions	One Fixed Print Preview	7 Variable stages - 25% to 400%
	Edit Document while Magnified or Reduced	NO	YES
	Search & Replace (150 words in 9000, 7 Pages)	61 Seconds (On Amiga A1200)	7 Seconds (On Amiga A1200)
	Index and Table of Contents	YES, Automatic	NO, Requires Manual Entry
	Multiple Newspaper Style Snaking Columns	YES, 2 to 32	YES, 2 to 6
	Style Sheets, Master Pages, Title Pages	NO	YES
	Uses Standard Amiga Clipboard for Cutting & Pasting to and from Different Applications	NO	YES
	Small Caps Typographical Control	NO	YES
	Conforms to Commodore's Amiga Standard 'Look & Feel' Guidelines	NO, Non Standard User Interface	YES
Geneeral Features	On-Screen Maths (Column Addition)	NO	YES
	Import ASCII Text from any Word Processor	YES	YES
	UK Registration, Upgrade and Support	YES	YES
	Free Memory Required	1.5Mb. Minimum More Recommended	1Mb. Minimum More Recommended
	Free Ongoing Technical Phone Support	NO, £38 per year after 60 days	YES, Free of Charge
	Recommended Retail Price	£129.95	£99.95

Copy II

Release 2 available now!

omplete control over how your documents look, now you have it! Final Copy II incorporates:
n-Screen Drawing Tools for generating boxes, borders, and lines or arrows at any angle, Multiple Newspaper yle snaking columns, combined with the unique ability to print the same PostScript quality outline fonts - on solutely *any* printer in portrait or landscape. These all mean that no matter what you may have thought, no her Amiga Word Processor has all the capabilities that Final Copy II users now simply take for granted!



The almost endless list of features includes On-Screen Object Drawing Tools (no more importing of borders from drawing packages to frame graphics or reverse-highlight text) with selectable rulers to aid precise positioning. Text Auto-Flows around graphic objects and imported pictures, which can be placed anywhere, scaled *and* cropped, with *no* loss of printing quality. Text can also be printed actually *over* graphics (refer to *"The Tiger"* heading on our document). No other Word Processor for the Amiga offers all this. *(*Compugraphic fonts require Kickstart 2 and Workbench 2.1 or later, with Final Copy II. They will not output on PostScript printers from any Word Processor - and would always be our second choice. ¹All fonts used in Final Copy II can print to the highest resolution that the printer will output).*

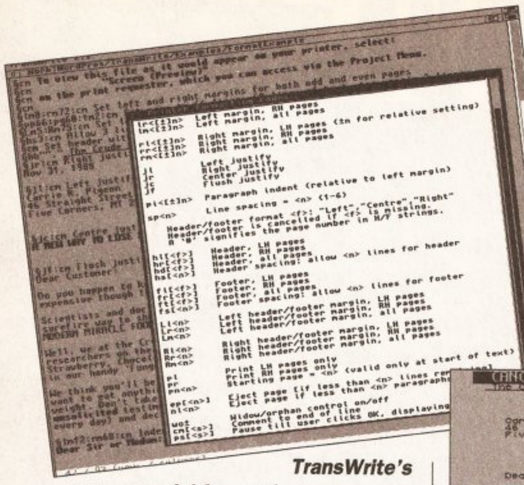
SoftWood - Quality software for your Amiga
With Final Copy II you're not just getting a one off product! SoftWood are acknowledged as the World's leading software company who develop for the Amiga, and no other system. Once you're a registered SoftWood product owner, you'll be gaining access to unlimited free UK technical support (others charge you), and preferential upgrades to new versions of this and other exciting products being developed right now!

Please rush my personal copy of the new Final Copy II information pack, including samples from popular printers, and a list of stockists to... (clip the coupon or call 0773 836781 now!)

Name & Address:

Please include your

SoftWood Products Europe
Box 19 Alfreton Derbyshire DE55 7RW England Tel: 0773 836781 Fax: 0773 831040



***TransWrite's* many special formatting commands enable you to change the way documents look when printed**

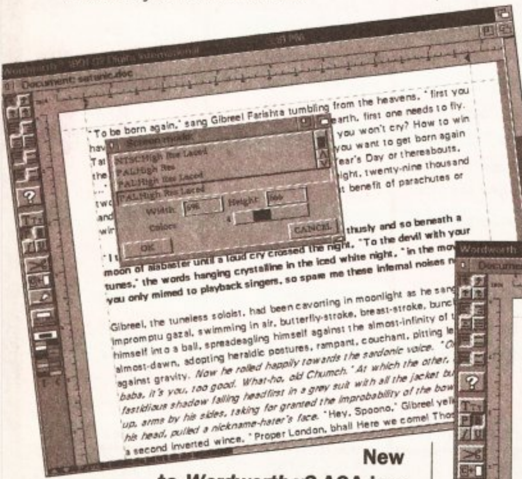
placing headers and footers; but this pales into insignificance when compared to *Protext's* more powerful system. If you want uncomplicated mail merging, then *Personal Write* has a simpler system. *KindWords 3* has a bigger spelling checker and thesaurus. And *TransWrite* has more and better text editing facilities...

There's nothing particularly wrong with *Scribble!* – there's enough to the program to enable you to bash out words and produce some fairly neat printouts – it's just that after comparing it with rival WPs you're left with the question: Why?

Basically it's underpowered and overpriced.

TRANSWRITE

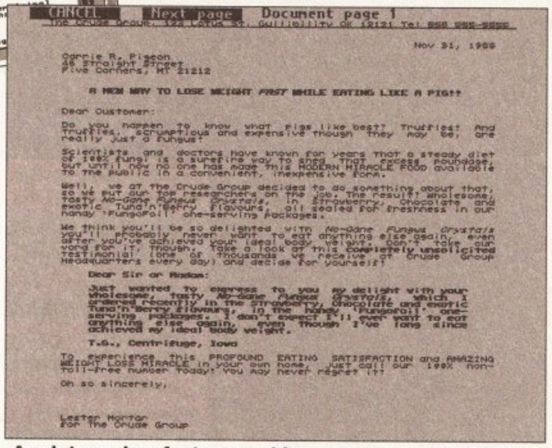
Like *Protext, TransWrite* is a WP that enables you to format the appearance of the printed output via special formatting commands that appear on the screen but do not get printed out.



New to *Wordworth* v2-AGA is a screen mode requester that allows up to 256-colour custom screens

Unlike *Protext, TransWrite* will run in 512k of RAM, and it is nowhere near as complex to learn how to use, a fact illustrated by the slim size of the manual. Of course it's not as powerful as *Protext*, but what *TransWrite* does may well be adequate for your needs.

Printer control is via Workbench preferences, and ANSI style escape sequences can be embedded into documents anywhere simply by pressing the Esc key, entering the style code, then pressing Esc again. In this way you can easily change fonts or issue any printer command in the ANSI standard, as documented in your Amiga manual and in the *Trans-Write* manual. This doesn't give you total control over the printer because the ANSI standard is quite limited, but it's better than nothing.



A print preview feature enables you to see on-screen what effect the formatting codes will have

The formatting commands provide you with a way of setting up headers and footers, odd and even margins, page numbering, widow and orphan control and text justification. A print preview features enables you to see a WYSIWYG display of your formatted document, so you don't have to keep printing out pages to discover what effect your formatting codes are going to have.

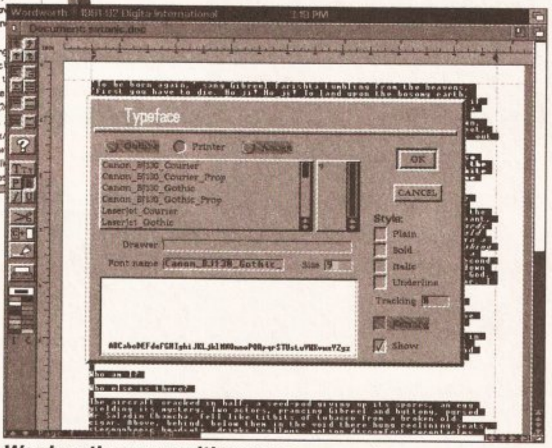
Mail merging is possible, as is index creation, and although the spelling checker is a US one and quite small, it has a 'batch' feature that enables you to check an entire document and then correct all the bad words afterwards, which means that if a document contains the same word misspelled many times you only have to correct it once in the spelling checker to correct all occurrences of the word in the document. Of all the other word processors, only *Protext* can also do this.

You may tell the spelling checker to use many different user dictionaries, and there's an 'exceptions' option that enables you to force the checker to throw out words that it normally accepts, like the US spelling of 'color' for example.

The dictionary is copied into RAM when in use, so you may need more than 512k if you want to use *TransWrite* and the spelling checker at the same time. The spelling checker can be run on its own if you are short of memory.

There is good macro support, enabling common operations or blocks of text to be assigned to a single keypress, and the 'translation tables' mean you can write abbreviations for commonly-used words or phrases for speed and have them all converted to their full text at once with a single operation.

As an inexpensive word basher, *TransWrite* is supreme; its balance between power, performance and price is just right. But if you want to include pictures in your documents or have total control over your printer, think again.



***Wordworth* comes with screen versions of printer fonts for many makes and models of printer. If you have selected the internal printer font method of printing, however, you will not be allowed to use outline or Amiga fonts, and vice versa**

WORDWORTH

Hot off the disk-duplicating presses comes the latest version of *Wordworth*, v2-AGA. The only differences from v2 are support for 256-colour custom screens, plus DblPAL, Super72 and Super High Res Interlaced. HAM-8 graphics are also now supported, plus 256-colour ILBMs and PCX files.

Do not confuse this version of *Wordworth* with the 'cheap' version doing the rounds on its own and in various bundles – that is the old v1.1, which is to all intents and purposes the same as *KindWords 3* with a few extra specialised bits thrown in. *Wordworth* v1.1 does not form part of this roundup, any more than the superseded versions of the other programs.

Wordworth's specialist area is printer font support. It is the only WYSIWYG Amiga word processor that will enable you to swap printer fonts mid-document, mid-line, or mid-word if you really must. It comes with various bitmapped 'screen fonts' that represent various internal printer fonts, so you simply highlight the text you want in this font and change it, highlight the text you want in that font and change it, and so on.

The advantage of using built-in printer fonts is speed of printing. The disadvantage is that they are not scalable, so you're stuck with certain sizes, usually 10 point and 12 point, which are dictated by the printer.

If you want more flexibility, then Compugraphic outline typefaces can be used. *Wordworth* comes with 17 of them, and there are plenty more available commercially and on PD disks, although not as many as there are PostScript Type 1 faces. The disadvantage of using outline typefaces is that everything is printed as graphics, which considerably slows down printing times.

If you want the absolute best of both worlds, your only option currently is to buy a PostScript printer. Speed and power combined always comes at a price.

Wordworth supports mono PostScript printing and comes with screen fonts for the 'classic 35' typefaces found in most PostScript printers. There is no facility to use or download PostScript 'soft' fonts.

Of all the Amiga word processors *Wordworth* currently has the most features and the best all-round printer support, facts that are reflected in its price. It has a pleasant user interface that isn't too difficult to learn, thanks to the excellent manual, and in a sensible screen mode it runs as quickly as any other. Running it even in 16 colours slows it down badly – almost unusably – on anything but an Amiga 4000. But then the same is true of all the other WYSIWYG WPs.

Wordworth's rival is *Final Copy II*. On specifications alone the choice seems clear cut – *Wordworth* wins. But if you don't need the internal printer font support, and if index generation and footnotes mean diddly-squat, the choice is much more difficult. If your needs are closer to DTP than word processing look at *Final Copy II* before deciding.

The write stuff

After our overview of the word processors on test, it's time to see how they compare head-to-head, feature for feature, to help you decide which one is right for you

There are many functions and features that are common to all word processors – simple things like moving the cursor quickly from one end of a line to the other; more involved operations like setting tabs and formatting paragraphs; every-day mundane jobs like importing and exporting; specialist tasks like mail merging and index generation. There's not enough space in a whole issue to discuss the hundreds of basic features of each WP; instead this section of the round-up concentrates on discussing and comparing some of the more important features of text editing, graphics handling and print quality.

HORSES FOR COURSES

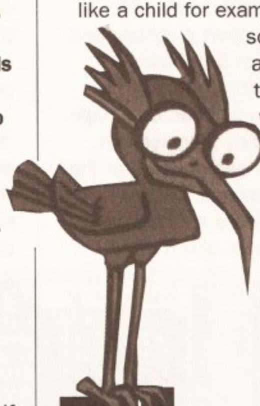
The best word processor is the one you are most comfortable using. It matters little that the software can make the tea, sing and dance and leap tall buildings in a single bound if you have to spend all your time remembering how to cut and paste a block of text.

If you use a program a lot you can get used to any way of working, even convince yourself that it is the 'best' way, which of course it will be once you are used to it. Any other way of working becomes awkward and time-consuming because you have to learn a whole new set of rules. But if you only occasionally use your word processor, it can be difficult to remember the rules from one session to the next, so the more it works in the way you would expect it to work, the more buttons or menu items there are that say "select me to achieve this complex operation that you can never remember how to do..." – in short, the more 'intuitive' or 'natural' the user interface, the easier will be the job.

On-line help and thick manuals with lots of tutorials are all well and good, but life's too short to be forever looking up how to do things.

We'll quickly look at manuals first because you should read the thing at least once, and the more professionally it has been written and presented, the sooner you'll be able to shove it on the shelf and forget about it.

Three of the word processors – *Wordworth, Final Copy II* and *Pen Pal* – come with excellent manuals, professionally produced and presented, well-written for the most part in simple English. If you need to learn about word processing or need to be able to show someone else, like a child for example, how the software works, any of these three packages will make your life easier.



The *Protext* manuals, which are the most detailed of all, are as a consequence a bit daunting for beginners. It doesn't help that they are 'multi-format' manuals that contain sections for the Atari ST and IBM PC as well as the Amiga on what seems like every other page. Still, if you are the type of person who likes to get your teeth into the software, the *Protext* manual will keep you very happy, probably for years.

There ought to be a law against producing manuals like the one that comes with *KindWords 3.* It would seem that the publishers have presumed that the program is so simple to use that a proper manual isn't really needed – either that or they were too tight-fisted to do the job properly. Cloanto, the Italian publishers of *Personal Write,* would be well advised to have its manual re-written in English as opposed to merely translated because it spoils what is otherwise a very adequate word processor.

TransWrite and *Scribble!* come with adequate manuals. *Excellence!* is shipped with a large loose-leaf ring-bound manual that is impressively over-produced but deceptively adequate in content.

TEXT EDITING

Manuals out of the way, let's get down to the nitty-gritty of comparing some features. Text editing is essential to all word processors, so we'll look at that next.

The most natural way to cut (or copy) and paste a block of text is to use the mouse to highlight the section of text in question, press a scissors or camera icon or 'button' that cuts or copies that text into a buffer, move the cursor to where you want the text moved or copied, and then press a gluepot button to paste the text into place.

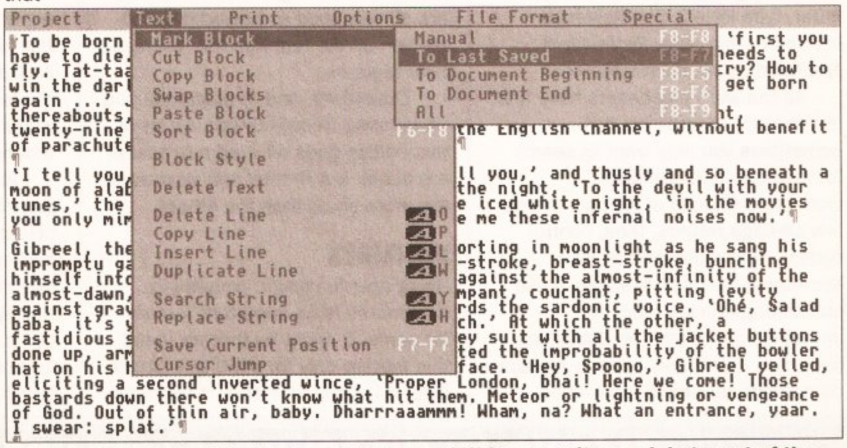
The next most natural way to achieve the same operation is via the keyboard using keypresses that are the accepted 'standard' way of doing it. On the Amiga this means Amiga-X for Cut (because the letter 'X' looks like a pair of open scissors), Amiga-C for Copy (for obvious reasons), and Amiga-V for Paste, which might seem daft, but V is next to X and C on the keyboard you see.

Wordworth, KindWords 3, Excellence!, Final Copy II, Scribble!, Pen Pal and *Protext* adhere to these 'hot-key' conventions. *TransWrite* gets two out three right, but uses Amiga-P for Paste, a keypress which a lot of other applications reserve for Print. *Personal Write* does its own thing that is quite difficult to get used to, often requiring many more keypresses than are really necessary.

Incredibly, even though these are three of the most commonly-used features of a word processor, only one program provides you with on-screen cut, copy and paste buttons in a tool bar: *Wordworth.*

Another keyboard convention is that used for moving from one end of a line to the other. In Amiga text gadgets and on the command line this is achieved by holding down the Shift key and pressing the right and left arrow keys. Only *Protext* and *TransWrite* use this convention. Well, *Scribble!* does too, but it leaves the cursor on the last character on the line instead of just after it, which is damn annoying. *Final Copy II* uses Alt-arrows; *Pen Pal, KindWords 3* and *Wordworth* use RightAlt-arrows; *Personal Write* and *Excellence!* use Ctrl-arrows.

This may seem like a trivial matter but if you use lots of Amiga applications and in every other program you are used to moving from one end of a line to the other with a Shift-arrow keypress, having to remember that your word processor



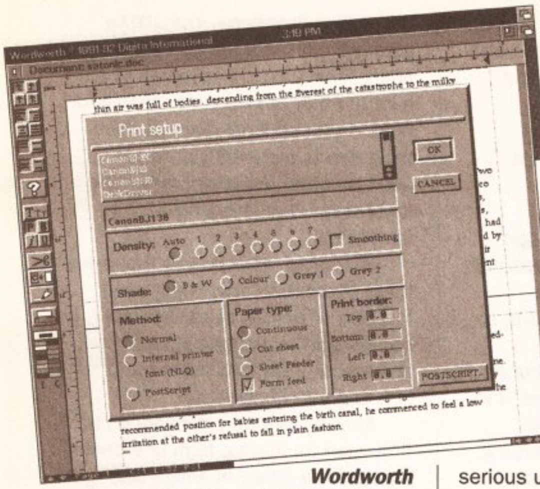
The text editing features in *Personal Write* are quite good, but most of the hot-key shortcuts are non-standard, which means they're harder to remember

USING YOUR BEST OFFICES

If you're in the market for a spreadsheet and database as well as a word processor, it may be worth your while investigating the integrated 'office' packs available.

It's outside the range of this round-up to assess the full contents of these packages, but it's worth pointing out which word processor comes with which 'office'. *The Works! Platinum* (reviewed in *Amiga Shopper* 10) comes with a version of *Scribble!; Gold Disk Office* (reviewed in *AS* 20) comes with a version of *TransWrite; Mini Office* (reviewed in *AS* 17) contains a word processor that is in many areas faster and more powerful than *Scribble!* and *TransWrite,* and it's a shame it isn't sold separately at a budget price.

• Want the full details? To order a back issue, see page 95.



Wordworth **can print with Normal fonts (Outline/Amiga), internal Printer fonts or using PostScript devices**

does it differently is a real pain. On the other hand, if you word process a lot at work on another computer and use (say) Ctrl-arrow for this operation, you may prefer your Amiga word processor to do the same. Perhaps the ideal solution is the one *Protext* offers: it can be configured to use Ctrl-arrows instead of Shift-arrows if you so desire.

A common typographical error when you're bashing away at the keyboard knocking out words is that of transposing two letters in a word – typing them the wrong way round because your brian is way ahead of your figners. It's useful in a word processor to have a quick single keypress to swap them back rather than having to 'delete, delete, type letter, type letter'. One keypress instead of four. Only *Protext* and *Wordworth* have such a feature.

All the word processors have find and replace requesters, but sometimes you may want to search for invisible 'non-printable' characters instead of words – things like carriage returns, tabs, control codes – and replace them with something else. For example, while sub-editing articles ready for importing into a desktop publishing package I often have need to replace paragraphs that have blank lines between them with paragraphs that have no blank lines between them. If I were using *Scribble!, KindWords 3, Personal Write, Pen Pal, Excellence!* or *Final Copy II* I would not be able to do this by searching for all double carriage returns and replacing them with one. Only *Protext* and *Wordworth* have this feature.

There are quite a few more specialist text editing facilities that a serious user might require, but I won't labour the point because I think I've already illustrated the fact that if text editing power is what you are looking for, the choice is between *Protext* and *Wordworth*. That's not to say all the others are bad at text editing – far from it, they are all very good at text editing and contain all the features the 'average' user requires.

Essentially, and to plagiarise and paraphrase George Orwell, as far as text editing goes all word processors are equal, but *Protext* and *Wordworth* are more equal than the others.

PICTURES

Being able to include pictures in documents is an important feature for some. It might be that you need this feature only for printing a simple logo at the top of letters; it might be that you want to produce a newsletter that contains illustrations; it might be that you want to make business reports that contain charts and graphs; it might be that you want to produce a catalogue or advert that features hand-scanned pictures... there might be any number of good reasons why you need a graphics import feature.

Five of the word processors reviewed here support graphics, and all of those except *Excellence!* enable you to place a graphic by dragging it to any position on a page. *Excellence!* handles graphics in a unique way: they get imported at the current cursor position and are treated as if they are a single, very large text character, and if this character is in the middle of a paragraph you are left with a gaping great hole in that paragraph above the graphic. This means that if you want text to flow around the edges of a graphic, *Excellence!* is not for you. But for simple stuff like logos and illustrations that are set apart from the text, it can be a quicker way of working than dragging a big box around the page.

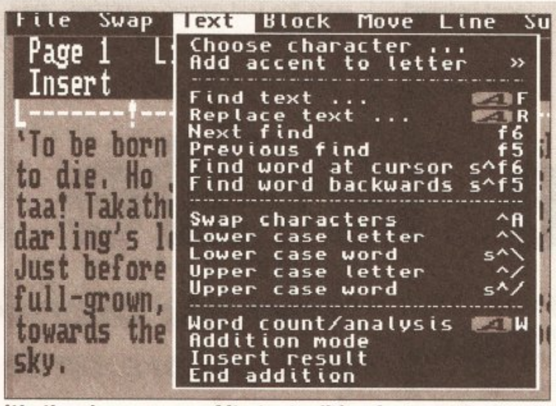
Although *Excellence!* will import graphics up to Extra-HalfBrite (64 colours), these get converted to the current number of screen colours, and the maximum of these is 16. *KindWords 3* also works this way, but is able to adjust its palette to the 16 colours used most in the graphic. *Wordworth* works similarly but supports 256-colour screens on AGA chipset machines; otherwise it's 16 colours maximum again. With these three programs if you reduce the number of on-screen colours, you reduce the number of colours in the graphic and the number of colours (or greyscales) that will be printed.

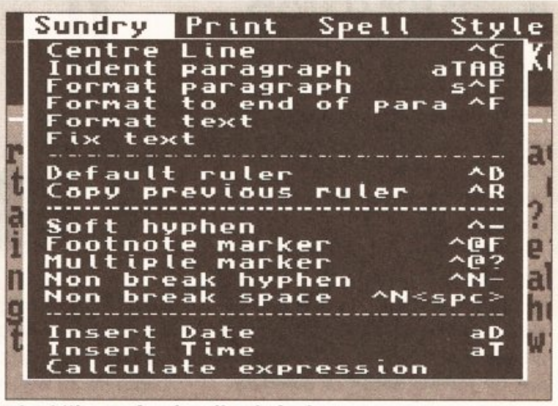
The advantage of this 'cut-down-the-colours' method is that you see what you get; the disadvantage is that you can't work in the faster two-colour or four-colour modes and still print the graphic in all its glory.

Only you will know whether this 'feature' will affect your work. If it doesn't, no problem; it it does, then consider *Pen Pal* or *Final Copy II,* both of which create a quick 'few-colour' representation of the graphic on-screen to work with but retain the full colour information in memory for printing purposes. The advantage here is obvious, the disadvantage is memory – the bigger the original graphic and the more colours in it, the more memory you will need to be able to load and print it.

Displaying and printing graphics are two of those jobs that use lots of memory – much more than you would perhaps think. Surely 2Mb is enough? Nope. A couple of pages of text in some outline typefaces, a few sexy graphics, and a decision to print the lot at Density 7 will soon put paid to that notion. So keep in mind that if you want to word process in colour using silky smooth outline typefaces and luvverly pictures all over the place, you will need to have at least 3Mb of memory to work comfortably – anything less and you can expect to get those "Out of memory" requesters quite frequently.

Despite *Wordworth's* new-found 256-colour custom screen support, *Final Copy II* has without doubt the most flexible and comprehensive IFF-ILBM graphics support, plus it includes tools with which to draw lines, boxes and ellipses. Because it handles colours in a non-WYSIWYG way, much like DTP programs do, you are able to define and use up to 4,096 colours for text, lines and fills in any one document. Not everyone needs this many colours, but if you





It's the sheer power of its text editing features that makes *Protext* 'the professional's choice'

CASTING AN EYE TOWARDS LOST HORIZONS

We were unable to get copies of the latest versions of the New Horizons word processors, *QuickWrite* and *ProWrite*, in time for this roundup.

Just to complete the WP jigsaw for you, *QuickWrite* is a 'words-only' word processor, very much in the *TransWrite / Personal Write / Scribble!* vein. And unless it has changed considerably since we last looked at it, it rates below *Scribble!*.

ProWrite is a WYSIWYG word processor similar to *Final Copy II, Excellence!* and *Wordworth*. Based on the last version we saw (v3.2, reviewed in *AS* 12), *ProWrite* is on a par with *Excellence!* but far from the cutting edge. However, it is the only Amiga word processor that enables you to write in 'side-by-side' columns (as opposed to 'snaking' newspaper style columns), a feature that helps with writing scripts and screenplays.

The other Amiga word processor not featured here is *Word Perfect,* a lumbering giant of a program that is powerful like *Protext* but two or three times the price. It hasn't been upgraded for a couple of years, and Word Perfect Corp on several occasions has made public its intention not to do any more work on the current Amiga version, which is v4.1.12. The only reason I can think of why you should choose Amiga *Word Perfect* as your word processor is if you use a version of *Word Perfect* at the office and are comfortable with its user interface.

do, *Final Copy II* is worth looking at before you rush out and buy a dedicated DTP package.

PRINTING

I don't want to dwell on the subject of printing too long because it can quickly degenerate into a technical diatribe. Obviously, all the word processors can print, but some do it better than others.

There are two ways of printing – text and graphics. Text printing means using the fonts in your printer, not the fonts on the screen. Graphics printing means using the fonts on the screen, not the fonts in the printer. Documents that use Amiga bitmap fonts or any type of outline typeface print as graphics, not as text. And documents that print as graphics take much longer to print than documents printed as text. But unless you own a PostScript printer, with text printouts you are restricted to using only the few non-scalable fonts built into your printer.

Amiga Shopper is forever being asked by frustrated users what they can do to speed up their printouts from programs like *Wordworth, Final Copy II* and DTP packages that use outline typefaces. The answer is: graphics printing speed is governed by the speed of the computer's CPU, the data transfer rate along the printer cable, and the speed at which any particular printer can move its print head. There's no such thing as a 'faster' printer driver as such. Yes, printer drivers are programs just like anything else, so it's possible for someone to write a poor driver that runs slowly and for someone else to write one that runs more quickly, but the drivers that are supplied with your Amiga are pretty efficient.

This means that the only way to speed up printing in order to get pages of outline typefaces out of the printer in five minutes instead of half an hour is to buy an accelerator board or a faster Amiga. Sorry to be so brutal about it, but this is a fact of life.

The reason I'm spelling out this stuff about speed is so you understand that while *Wordworth* and *Final Copy II* can produce spectacular quality printouts, they take a long time to do it on a standard Amiga 500, 500+, 600, 1500 and 2000. Graphics printing will be faster on the 1200, faster still on the 3000, 4000/030 or any other Amiga with a 68030 CPU and some 32-bit memory, and fastest on the 4000/040.

The best compromise between speed and print quality is *Wordworth,* which supports a large number of internal printer fonts. You will be restricted to a small range of sizes and fonts, but you will be able to freely mix in the document any of the fonts in your printer that *Wordworth* supports. These will print as text, and pages will fly out of the printer.



The next best is any of the word processors that enable you to send 'change font' control codes – *Protext, TransWrite, Personal Write, Scribble!* – but remember that none of these supports graphics printing, so no imported pictures, and you'll have to learn how to send control codes.

AND FINALLY ...

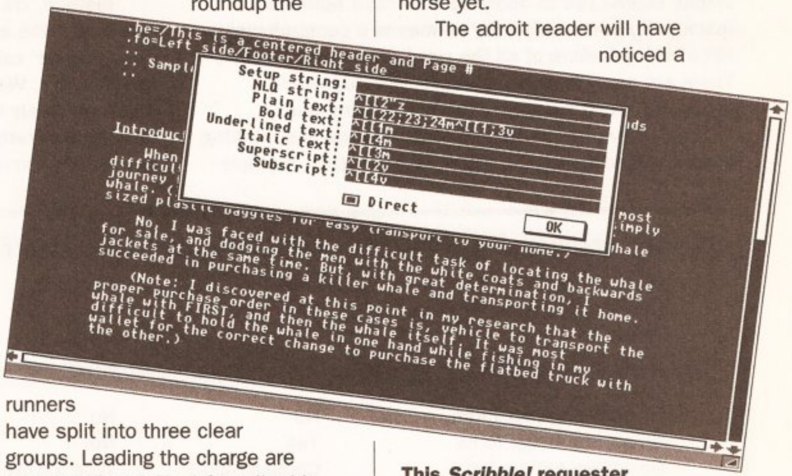
Since our last word processor roundup the runners have split into three clear groups. Leading the charge are *Wordworth* and *Final Copy II,* with *Protext* a length behind but aiming to make ground with the version 6 Arnor is currently working on.

A couple of lengths away, under pressure but not making any impression on the leading pack despite the cheers of the crowd, is *Excellence!*.

Several furlongs back and losing ground rapidly are *Pen Pal, KindWords 3, TransWrite* and *Personal Write.*

Scribble! has pulled up lame and should really be put out of its misery, but it is being led limping round the bend by a potty jockey who is convinced there's life in the old horse yet.

The adroit reader will have noticed a relationship between price and performance. Just for once, at this particular moment in time, it's fair to say that as far as Amiga word processors are concerned you *do* get what you pay for.



This *Scribble!* requester enables you to send printer-specific control codes direct to parallel or serial devices (as opposed to ANSI codes to PRT:) by activating the Direct button

CHECKOUT • CHECKOUT • CHECKOUT • CHECKOUT • CHECKOUT

Package	Price	Editing	Layout	Font Support	Graphics	Manual	Spell	Print	Extras	Overall
Wordworth	1	10	12	12	10	10	6	12	8	81
Final Copy II	2	6	10	10	12	12	8	10	6	76
Protext	3	12	4	6	2	6	10	8	10	61
Excellence!	4	8	8	5	5	4	12	1	12	59
Pen Pal	6	4	6	4	8	8	2	2	5	45
KindWords3	5	3	5	8	6	1	5	6	2	41
TransWrite	8	5	2	3	1	3	3	5	4	34
Personal Write	12	2	3	2	4	2	1	4	3	33
Scribble!	10	1	1	1	3	5	4	3	1	29

HOW TO READ THE RATINGS

The rating system used here is different from *Amiga Shopper's* usual "blobs out of 5" system, which we thought was too limited for comparing so many features of so many packages. Instead, this system is based on the way the drivers score points in Grand Prix racing.

We looked at one category of features at a time, and the package that we rated best in that category scores 12 points, next best gets 10, third best scores 8, fourth best 6, fifth best 5, and so on down to 1 for the least impressive in that category. No two packages will have the same score in any one category.

At the end the points are totalled, giving a single Overall score for each package.

This system enables you to remove categories that aren't important to you and re-total the scores to get a more personal overall rating. For instance, if graphics and WYSIWYG font and layout support don't matter to you, then add the scores up without counting those three columns – in this example you'll find that *Protext* comes out top, followed by *Wordworth* and *Excellence!*.

The scores for prices are based on the programs' recommended retail prices. The most expensive scores 1, the cheapest scores 12. If you want to be scientific about it, you could flick through the adverts in this issue, compile a list of current 'street' prices, and then adjust the Prices ratings accordingly. If two prices are the same, give the higher mark to the one that has been discounted the most. The Overall 'true value' rating you get this way may be all you need to make a final choice.

FEA

At the end of the day, your choice of word processor is down to what it can do and how well the way it does it suits you. The latter is a complex question – you'll have to read our detailed round-up to decide – but this chart should enable you to compare important features quickly. However, this is by no means a comprehensive list of every feature of all the word processors on test. There are many features common to every word processor, most notably in the text editing and document formatting departments – things like marking blocks, cut/copy/paste, multiple page sizes, multiple measurement systems... far too many to mention. These common features are omitted from the chart for the sake of clarity – row upon row of 'Yes' under every heading would not be a lot of help to anyone.

Instead, we have picked out the features which we consider raise an ordinary word processor from the 'casual-user' category into the realms of serious productivity. We wouldn't advise basing a buying decision solely on this chart – it's more a guide to the bells and whistles, over and above the fundamental information covered over the last eight pages.

TEXT EDITING	EXCELLENCE!	FINAL COPY II	KINDWORDS3	PEN PAL	PERSONAL WRITE
Multiple documents	Yes	Yes	Yes	Yes	Yes
Bookmarks (for quick goto)	Yes	No	No	No	Yes
Timed autosave	Yes	No	No	No	No
WYSIWYG TYPEFACE SUPPORT	**EXCELLENCE!**	**FINAL COPY II**	**KINDWORDS3**	**PEN PAL**	**PERSONAL WRITE**
On-screen printer fonts	No	No	No	No	No
On-screen Amiga fonts	Yes	No	Yes	Yes	No
On-screen outline fonts	Compugraphic	Type 1/Own format	No	No	No
Outline fonts supplied	None	21	None	None	None
DOCUMENT LAYOUT	**EXCELLENCE!**	**FINAL COPY II**	**KINDWORDS3**	**PEN PAL**	**PERSONAL WRITE**
Rulers	Multiple	Multiple	Multiple	Multiple	None
Multiple columns	8	6	No	No	No
Headers/Footers	Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes	Yes/No
Footnotes/Endnotes	Yes/No	No/No	No/No	No/No	No/No
Page numbering	arab	arab/rom/alph	arab/rom/alph	arab	arab/rom
Facing pages	Yes	Yes	No	Yes	No
Widow/orphan control	No	No	No	No	No
Automatic hyphenation	Yes	Yes	Yes	No	Yes
Font/Style find and replace	Yes	Style tags	No	No	No
GRAPHICS	**EXCELLENCE!**	**FINAL COPY II**	**KINDWORDS3**	**PEN PAL**	**PERSONAL WRITE**
IFF-ILBM import up to	Extra-HalfBrite	24-bit	HAM-6	HAM-6	None
Best graphics output	16 colours	4,096 colours	16 colours	4,096 colours	None
Move/Resize/Crop	Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/No	Yes/Yes/Yes	No/No/No
Vertical/Contour text flow	No/No	Yes/Yes	Yes/Yes	Yes/Yes	No/No
Show/hide graphics	No	No	No	Yes	No
Snap to grid	No	No	No	Yes	No
Position by coordinates	No	Yes	No	No	No
Drawing tools	None	Line/Box/Circle	None	Lines/boxes/fills	None
PRINTING	**EXCELLENCE!**	**FINAL COPY II**	**KINDWORDS3**	**PEN PAL**	**PERSONAL WRITE**
Embed printer control codes	No	No	No	No	Yes
Use multiple printer fonts	No	No	No	No	Yes
Select printer font number	Yes	No	No	No	Yes
Mix graphics and printer font	Yes	No	Yes	Yes	No
Amiga font output	Jaggy	No	Smooth	Jaggy	No
Outline font output	Jaggy	Smooth	No	No	No
Best PostScript support	Mono/Landscape	Colour/Landscape	None	None	Simple text
Download PostScript fonts	No	Yes	No	No	No
SPELLING/GRAMMAR	**EXCELLENCE!**	**FINAL COPY II**	**KINDWORDS3**	**PEN PAL**	**PERSONAL WRITE**
Dictionary/Thesaurus	UK	UK	UK	USA	None
Words in dictionary	103,000	110,370	116,000	110,000	None
Thesaurus cross references	470,000	826,000	826,000	None	None
User dictionary	Yes	Yes	Yes	Yes	No
Check grammar	Yes	No	No	No	No
MISC	**EXCELLENCE!**	**FINAL COPY II**	**KINDWORDS3**	**PEN PAL**	**PERSONAL WRITE**
Mail merge	Simple	Simple	Simple	Simple	Simple
Create Index/Table of contents	Yes/Yes	No/No	No/No	No/No	No/No
Macros	Yes	Yes (needs ARexx)	No	No	No
ARexx support	Yes	Yes	No	No	No
On-line help	None	None	Yes	Yes	None
Printed pages screen preview	Yes	Yes	No	Yes	Yes
Minimum memory required	1Mb	1Mb	1Mb	1Mb	512k
VERSION ON TEST	**v3.00**	**Release 2**	**v3 Rev 1**	**v1.5**	**v3.1**

TURES chart

OK, so all word processors can handle basic operations like cutting, pasting and copying text. But what about the fancier stuff? Which WP has the best graphics features or the biggest dictionary? This chart tells you all!

PROTEXT	SCRIBBLE!	TRANSWRITE	WORDWORTH
Yes (36)	Yes	Yes	Yes
Yes (9)	No	Yes	Yes
Yes	No	No	Yes
PROTEXT	**SCRIBBLE!**	**TRANSWRITE**	**WORDWORTH**
No	No	No	Yes
No	No	No	Yes
No	No	No	Compugraphic
None	None	None	17
PROTEXT	**SCRIBBLE!**	**TRANSWRITE**	**WORDWORTH**
Multiple	None	None	Multiple
Cut-and-paste	No	No	Yes
Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes
Yes/Yes	No/No	No/No	No/Yes
arab	arab	arab	arab/rom/alph
Yes	Yes	Yes	Yes
Yes	No	Yes	Yes
Yes	No	Yes	Yes
No	No	No	Yes
PROTEXT	**SCRIBBLE!**	**TRANSWRITE**	**WORDWORTH**
None	None	None	HAM-8
None	None	None	4,096 colours
No/No/No	No/No/No	No/No/No	Yes/Yes/No
No/No	No/No	No	Yes/Yes
No	No	No	No
No	No	No	No
No	No	No	No
Lines (IBM)	None	None	None
PROTEXT	**SCRIBBLE!**	**TRANSWRITE**	**WORDWORTH**
Yes	Yes	Yes	No
Yes	Yes	Yes	Yes
Yes	Yes	Yes	WYSIWYG
No	No	No	No
No	No	No	Jaggy
No	No	No	Smooth
None	None	None	Mono/Landscape
No	No	No	No
PROTEXT	**SCRIBBLE!**	**TRANSWRITE**	**WORDWORTH**
UK	UK	USA	UK
110,000	103,000	90,000	116,000
826,000	470,000	None	826,000
Yes	Yes	Yes	Yes
No	No	No	No
PROTEXT	**SCRIBBLE!**	**TRANSWRITE**	**WORDWORTH**
Advanced	Simple	Simple	Advanced
Yes/Yes	No/No	Yes/No	Yes/Yes
Yes	No	Yes	Yes
No	No	No	No
Yes	None	Yes	Yes
Yes	Yes	Yes	Yes
1Mb	512k	512k	1.5Mb
v5.55	**v3.05**	**v2.2**	**v2-AGA**

SHOPPING LIST

The prices quoted below are recommended retail prices. Some of the packages are advertised at prices a good deal cheaper than these, so do shop around.

Personal Write.................. £29.95

by Micro-PACE UK Ltd
Unit 10, Perth Trading Estate,
Perth Avenue,
Slough, Berks SL1 4XX
☎ 0753 551888

TransWrite £39.95

by Silica Systems
1–4 The Mews,
Hatherley Road,
Sidcup, Kent DA14 4DX
☎ 081-309 1111

Excellence!........................ £79.95
KindWords 3...................... £79.95
Scribble! £34.95

by Silica Systems
1–4 The Mews,
Hatherley Road,
Sidcup, Kent DA14 4DX
☎ 081-309 1111

Pen Pal............................. £49.95
Final Copy II...................... £99.95

by Gordon Harwood Computers
New Street
Alfreton
Derbyshire DE5 7BP
☎ 0773 836781

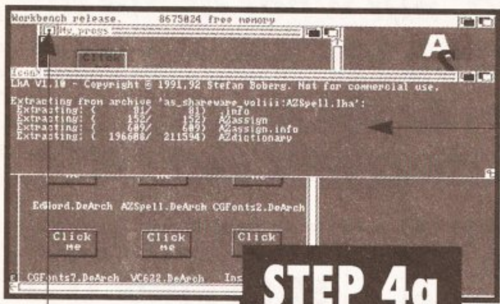
Protext £80.00

by Arnor Ltd
611 Lincoln Road
Peterborough
Cambs PE1 3HA
☎ 0733 68909

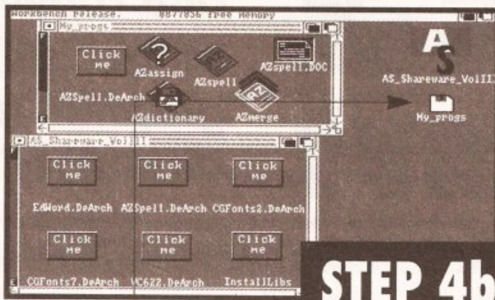
Wordworth...................... £129.95

by Digita International Ltd
Black Horse House
Exmouth
EX8 1JL
☎ 0395 270273

Getting at the programs



STEP 4a



STEP 4b

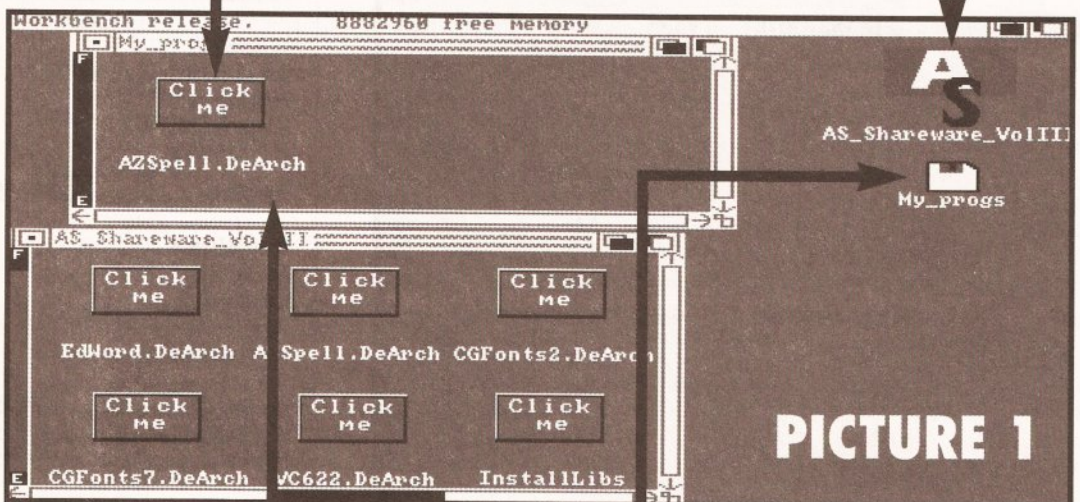
The de-archived files won't appear in the window. You have to close it and re-open it to see them there

STEP 4

IconX will list the files to a window as they are de-archived

Double-click on the My_progs icon to re-open the window

STEP 1

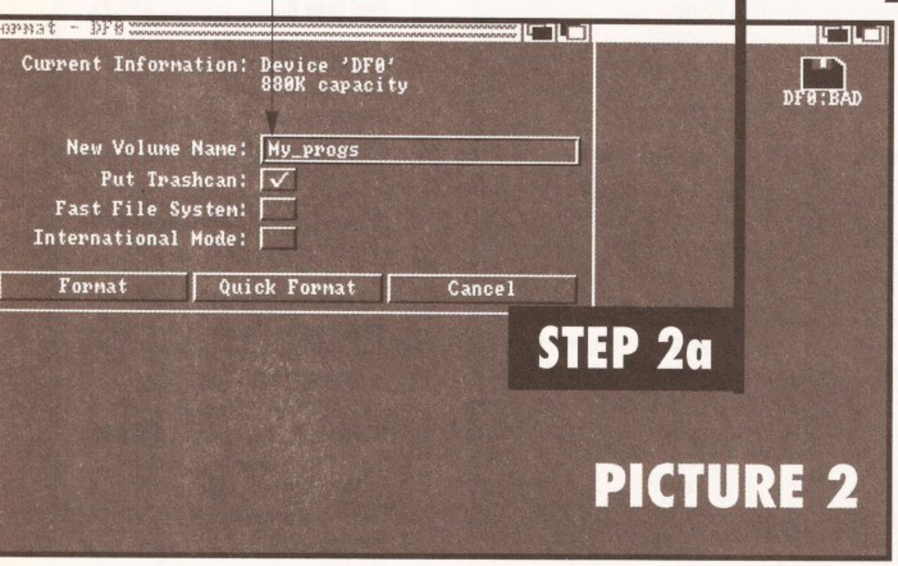


PICTURE 1

STEP 3

Click in the box 'New Volume Name' and enter the title you'd like for the disk

STEP 2



STEP 2a

PICTURE 2

Formatting a disk

All the programs on the cover disk this month have been compressed using an archiving utility known as *Lha*. This means that we have been able to cram more lovely Amiga software on to the disk, but it also means that you can't run the programs straight away – they must be de-archived before you can use them. If you're working with a floppy disk based system then you'll need to have some blank formatted disks available (see step 2a).

Follow our simple four-step guide and you'll soon have this month's software at your fingertips.

PICTURE 1

Step 1

First off, insert the copy that you've made of the cover disk (use the guide in the 'vital' box at the top of the page if you're not sure about this) and double-click on the *Amiga Shopper* icon that appears on the screen. This will open a window with six icons in it – this month's software – each of which says in large friendly letters 'Click me'. Don't do this just yet though – first you've got to decide where you want to put the de-archived programs.

Step 2

For this example we've chosen to de-archive to a pre-formatted disk called My_progs and now's the time to insert it. If you've got more than one floppy drive, then life's very easy – simply stick your destination disk in the second drive. If you only have a single floppy system, no problems, just remove the cover disk and insert the disk you're going to de-archive to. Now double-click on the new disk icon and a window will open for that disk.

> *"The first thing you should do is protect your cover disk by write-protecting it."*

PICTURE 2

How to format a disk

Before you can use the software on this month's cover disk you'll need to de-archive it, and unless you've got a hard drive to fit them all on you'll need to have some blank formatted disks available on which to store the

VITAL:

The first thing you should do is protect your cover disk from accidents by making sure it is write-protected – make sure the little black tab is open so you can see through the hole. This means nothing can now be written to the disk, including viruses. If you don't write-protect your disk and end up with a virus on it, it's your own problem.

The next thing is to make a back-up copy of the cover disk in case the worst should happen while you're working with it. The easiest way to do this is using the Shell. So, open a Shell window and then type the following at the prompt:

```
diskcopy from df0: to df0:
```

Your machine will now ask you to insert the SOURCE disk (that's the

read this first

cover disk) in df0: and then press Return to continue.

The Amiga will read some of the information from the disk and then ask you to insert the DESTINATION disk (the empty disk you want to make the copy on). You'll have to change disks several times – a System Requester window will appear each time, telling you which disk to insert.

If you have more than one floppy drive, you can of course copy from one drive to the other by typing:

```
diskcopy from df0: to df1:
```

Now that you've made a copy of the cover disk, stash the original in a safe place and work only with the duplicate.

CAN'T READ THE DISK?

It's rare, but it's possible that out of the tens of thousands of cover disks we duplicate a few might be corrupted – you get a requester saying 'Not a DOS disk' as soon as you insert it, or one reporting a Read Error as you try to de-archive one of the programs. If your disk has been corrupted, we will of course happily replace it. Send the faulty disk (along with a self-addressed envelope – a Jiffy bag is best) to:

Amiga Shopper 25
PO Box 21
Daventry
NN11 5BU

Please include a brief note stating what the problem is, what hardware you're using and which version of the operating system you're running.

DISK CONTENTS

The *Amiga Shopper Shareware Collection Volume III* contains a variety of useful utilities:

- **EdWord** is a powerful and versatile text editor
- **AZSpell** is a spelling checker that works on most text files
- **VC622** is a fully up-to-date virus checker
- *Plus* a total of 13 CompuGraphic outline fonts

For full details, turn to page 28

To save your poor fingers from pounding the keyboard, we've used the rest of the space on the disk to include all the source code from within this issue of the magazine. You'll find this in a directory called **Source_code.** In there you'll find five further directories containing the following:

ARexx (dir) – see page 78
Open.rexx, ReadIn.rexx
Readch.rexx, WriteIn.rexx
Chaos (dir) – see page 48
Listing1, Listing2
AMOS (dir) – see page 62
GetInput.AMOS, InterfaceDemo.AMOS
AmigaDOS (dir) – see page 70
pest2, pest3
pestread.me, setevt
listevt
Code_Clinic (dir) – see page 44
Stripes, Stripes.s

The Amiga Shopper Shareware Collection Volume III



This month we bring you a powerful text editor, a handy spelling checker, an up-to-date virus checker and much more. Read on for all you need to know

decrunched programs.

It's easy to format a disk from either the Shell or the Workbench. If you want to format via the Shell then open a Shell window and type the following at the prompt:

```
format device df0: name
My_progs
```

(This should all be one line, by the way – it's just a bit long for our columns.) You'll then be asked to insert the disk in df0: (the internal floppy drive) and press Return to confirm that you want to format the disk or Control-C if you've decided not to.

The alternative method for formatting a disk is from the Workbench. First put your disk in the drive. A disk icon will appear on the screen with the narrative **'df0:Bad'.** Click once on this icon with the left mouse button to select it. Now, move to the menu bar and hold down the right mouse button. Three menu titles will appear: Workbench, Disk and Special. Move to the Disk menu (which will drop down beneath its title) and select either **Initalise** (Workbench 1.3 users) or **Format** (Workbench 2 and 3 users). Once the Format window opens, click with the left mouse button in the box called 'New Volume Name' and delete the word Empty. Now type the name you want to call the disk – My_progs in the example we've shown. Then click with the left mouse button in the Format box and a window called Format Request will appear. Again, click with the left mouse button in the box named Format and your disk will be formatted.

> **"Work only with a copy of the disk and keep the original in a safe place."**

Step 3

Choose the programs that you want to de-archive (our example shows the **AZSpell** package) and drag the icon from the **Amiga Shopper** window to the **My_progs** window. (To do this, simply click on the icon called **AZSpell.Dearch** with the left mouse button, *keep the button held down* and drag the icon into the My_progs window, then release the button.)

The de-archiving script will now be copied to the **My_progs** disk. If you're using a machine with only a single floppy drive you will need to swap disks during the copying process – but don't worry, the System Requester window will appear on the screen each time you need to do this. Simply insert the disk you're being asked for. If you keep your source disk – the one you're copying *from* – write-protected at all times, you can't possibly overwrite or delete any data on it.

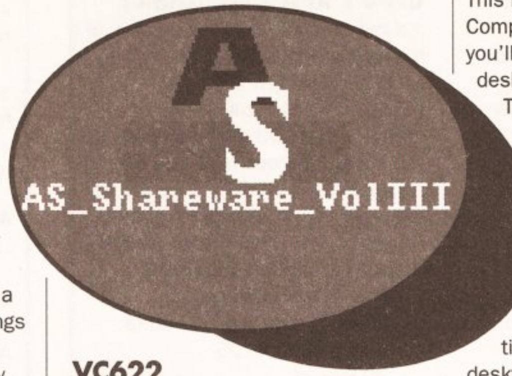
Step 4

Now for the easy bit. To de-archive the *AZSpell* package just double-click on the **AZSpell.arch** icon in the **My_progs** window and the programs are automatically decompressed. You'll have to do some more disk swapping – just follow the prompts as before. The picture labelled 'Step 4a' shows what you'll see on the screen as *AZSpell* is de-archived.

Picture 4b shows what you'll see once you've closed and reopened the My_progs window. The program is now ready to run in the normal way!

Your guide to the software

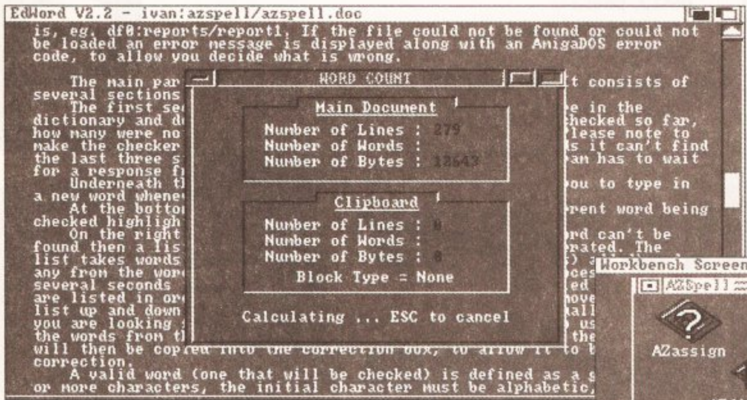
Just what can the programs on this month's cover disk do for you? Here's a quick introduction to what you'll find...



So just what do all these lovely utilities do? Read on and find out.

EDWORD

All Workbenches
Archived size: 124,650 bytes
Full size: 192,521 bytes



Call a program a 'text editor' and you expect a very basic word-cruncher. *EdWord* actually offers a good deal more

EdWord is a powerful and versatile text editing program that's extremely straightforward to use. It's the ideal package to turn your Amiga into a glass typewriter. It's called a text editor rather than a word processor, but there's not a lot it can't do, from formatting text to counting how many words you've written. And you can of course use it as a pure text editor and write your own programs with it. For details of all its functions and how to get at them, read the doc file included on the disk.

Use *EdWord* with the *AZSpell* spelling checker utility also supplied on the cover disk and you should be turning out perfectly presented documents every time.

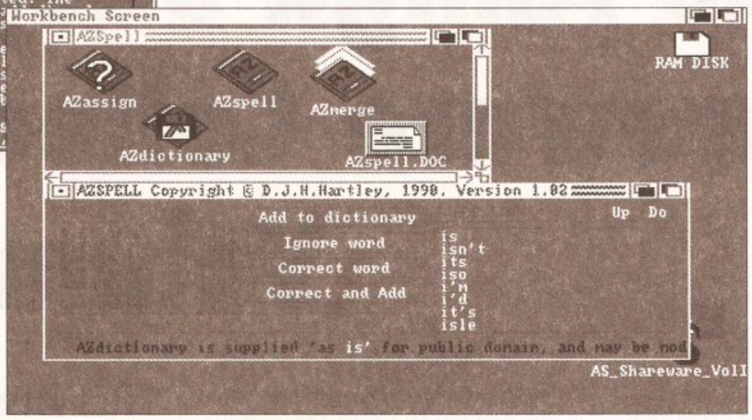
AZSPELL

All Workbenches
Archived size: 95251
Full size: 247,705

A spelling checker is one of the essential utilities that anyone who writes on a computer should have. The package on our disk – *AZSpell* – comes with a large dictionary file (more than 200k) that recognises words such as *aardvark* and *zygote,* plus most of the others in between.

When you run the program you'll see the text of the document that is being checked scroll along the bottom of the *AZSpell* window. Any word that isn't recognised is highlighted and a menu offers you a choice of words with similar spellings from the dictionary. You can add unidentified words to the dictionary, or indeed, merge whole new dictionary files. We've already taught the package a whole range of Amiga-related words for you.

One of the programs in the package is called **AZ_Assign** – you need to run this before you start the main spelling checker. Alternatively, if you're using Workbench 2 or above, drag the **AZ_Assign** icon into your **WBStartup** drawer. Users of other Workbench versions should copy **AZ_Assign** to their c directory and add the command **c:AZ_Assign** to their startup-sequence.

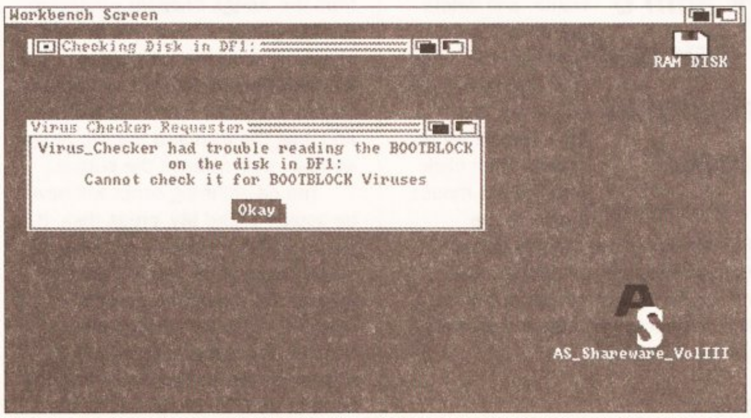


***AZSpell* not only comes with a large dictionary, but you can customise it and check your spelling in context**

VC622

All Workbenches
Archived size: 56,093 bytes
Full size: 115,962 bytes

If you've got our previous two cover disks, you may be experiencing a feeling of *déjà-vu* – we've included earlier versions of *Virus Checker* on each of them. This is the most recent version, released on 14 February 1993. To install *Virus Checker,* simply drag the icon into your **WBStartup** drawer (Workbench 2 and higher) or copy it to your c directory and put the line **c:Virus_Checker** in your startup-sequence.



This is the latest version of *Virus Checker,* so there's not much it can't cope with, but it's friendly enough to tell you whenever it encounters any problems

CGFONTS2

Workbench 2 and above
Archived size: 196,369 bytes
Full size: 276,076 bytes

This is a selection of five 'serious' CompuGraphic outline fonts that you'll find useful for anything from desktop publishing to video titling.

Their names are Middleton, Muriel, ParkHaven, RichardMurray and OswaldBlack. You can use them with the *Fountain* program supplied with Workbench 2 or the *Intellifont* program with Workbench 3, various video titling, word processing and desktop publishing packages – the documentation with your programs will tell you if they can use CompuGraphic format fonts.

CGFONTS7

Workbench 2 and above
Archived size: 177,632 bytes
Full size: 260,018 bytes

This archive contains six CompuGraphic outline fonts that you'll find useful for a variety of creative applications – MarkerFeltThin, Neuvarese-BoldItal, NixonInChina, OregonDry, Polo-SemiScript and Rechtman-Script.

MarkerFeltThin is a 'handwriting' font that gives the effect of a fine-point marker pen. While entirely legible at small point sizes, it has the most impact if you use it for posters and notices at sizes of 24 point and above. Polo-SemiScript and Rechtman-Script are both also handwriting fonts.

Neuvarese-BoldItal, as you've no doubt guessed, is a bold italic font. It's particularly useful because it includes additional characters such as fractions and Dingbats. Dingbats are a selection of handy symbols like a telephone ☎ and scissors ✂.

NixonInChina is an oriental style handwriting font that looks like the sort of type you often see used for Chinese restaurant menus. AS

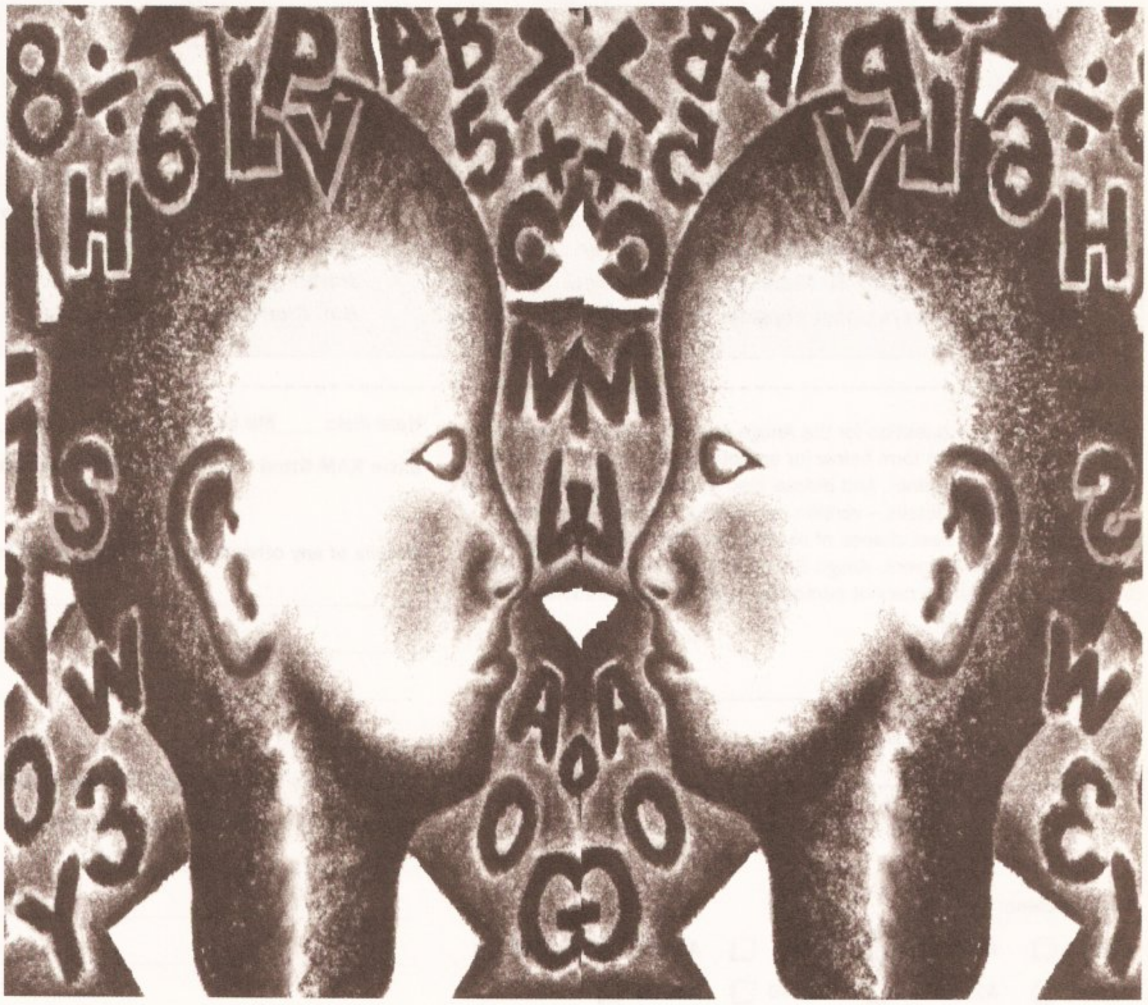
INSTALLLIBS

If you find that you get the message 'arp.library not found' when you try to run any of this month's utilities, then simply use InstallLibs to add it to your system.

CONTENTS AT-A-GLANCE

OUR EXPERTS TACKLE YOUR REAL-LIFE PROBLEMS

AMIGA ANSWERS



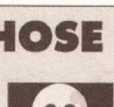
BANISH THE CONFUSION

SO WHAT DO ALL THOSE ICONS MEAN?


Beginners: this icon will appear next to any questions which are 'basic' in content.

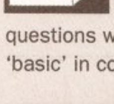

General: this icon is used for any general Amiga-related queries.

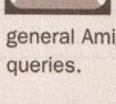

Caution: be sure that you fully understand the answer before trying it out.

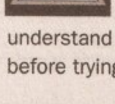

Danger: the answer to this question could well invalidate your warranty – or you!

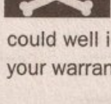

Hardware: this icon is used to denote questions relating to general hardware.

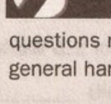

Buying advice: we use this icon if the question asks us for buying advice.

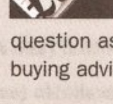

Printers: this icon denotes a query about printers, printer drivers and so on.


Technical: any queries about programming will have this icon next to them.


Video: this icon relates to any query about using your Amiga with video hardware.


Music: this icon is for questions about MIDI, sampling, synthesizers and so on.


Programs: any program-specific queries have this icon next to them.


Comms: if your question relates to comms, this is the icon that we'll use.

WHATEVER YOUR PROBLEM WITH THE AMIGA, WE ARE HERE TO SOLVE IT

That's the task we have set ourselves in giving you the best possible support for your Amiga. We are confident that our experts can cope with any technical questions you can throw at them. If they don't already know the answer to your problem, they will find it out for you.

We are prepared to deal with any problem you have with the Amiga, from general enquiries about AmigaDOS or Workbench, through questions about specific pieces of software and hardware, to advice on what you need to buy to do a particular task. If it's to do with the Amiga, we will help out. What we cannot do is offer this service over the telephone – do not phone us with your enquiries, but write to us at the address below.

We also cannot enter into personal correspondence – all enquiries will be dealt with in the pages of the magazine. This does mean a bit of a delay in solving your problem, but you'll just have to be a little patient and wait for it to appear in print. You won't get a personal reply even if you enclose an SAE with your letter, so please don't bother.

Send your question on the form below to: Amiga Answers, *Amiga Shopper*, Beauford Court, 30 Monmouth Street, Bath BA1 2BW.

The Amiga Answers panel consists of our consultant editors Mark Smiddy and Jeff Walker – and, of course, our editor Cliff Ramshaw. We will also be calling on the services of all our other contributors, so you won't be able to catch us napping – whatever the subject of your query.

Each panellist will be dealing with queries in their own specialist area(s) so it would help us greatly if, when writing, you label your query envelope with the name of the expert who can solve your particular problem.

Below is a list of areas of expertise. It's a list that we will add to and update every month, so you will know who to write to about any subjects not mentioned here.

Gary Whiteley –	Video
Paul Overaa –	Programming, music
Toby Simpson –	Programming, hardware
Jeff Walker –	Desktop publishing, printers
Mark Smiddy –	AmigaDOS, business, CDTV, hardware projects, hard and floppy disk drives
Jason Holborn –	Public Domain, AMOS
Jolyon Ralph –	Programming, hardware, CDTV
Gus Chandler –	All the other bits and pieces

If you send in a question for the Amiga Answers experts, please fill in and include the form below (or a photocopy if you don't want to cut up your magazine). And please also make sure that you include all the relevant details – version numbers of software and so on – so that we have the best chance of helping you. Send your form and question to: Amiga Answers, *Amiga Shopper*, 30 Monmouth Street, Bath BA1 2BW. Sorry, but we cannot personally reply to any questions – even if you include an SAE.

Name: ____________________

Address: ____________________

____

____

Your machine:

A500 ☐ **A500 Plus** ☐ **A600** ☐ **A1000** ☐ **A1200** ☐

A1500 ☐ **A2000** ☐ **A3000** ☐ **A4000** ☐

Approximate age of machine: __________

Kickstart version (displayed at the 'insert Workbench' prompt)

1.2 ☐ **1.3** ☐ **2.x** ☐

Workbench revision (written on the Workbench disk)

1.2 ☐ **1.3** ☐ **1.3.2** ☐ **2.x** ☐ **3.0** ☐

PCB revision (if known). Do not take your machine apart just to look for this! __________

Total memory fitted (see AVAIL in Shell for 1.3 Workbench) __________

Chip memory available (see AVAIL in Shell) __________

Agnus chip (if known) __________

Extra drive #1 (3.5"/5.25") as DF__: Manufacturer __________

Extra drive #2 (3.5"/5.25") as DF__: Manufacturer __________

Hard disk: ____Mb as DH__: Manufacturer __________

Extra RAM fitted – type, size in Mb and manufacturer __________

Details of any other hardware which could help us to answer your question:

____

____

____

____

Now, use this space to describe your problem, including as much relevant information as possible. Please continue on a separate sheet if necessary.

____

AS 25

NO PROBLEM!

Every month our aim on the Amiga Answers pages is to provide definitive solutions to those tricky problems that have had you baffled. And, while this section is based firmly on solving individual readers' questions, we also seek to set the answer in a wider context – thus giving helpful advice to all those people with an interest in a particular topic.

I've just inherited the task of reading through all the questions that pour into our office every day (at the astonishing rate of some 100 a week) and making sure that they're passed on to the expert in our team who's the best qualified to solve your problem.

It's our use of a wide variety of experts to tackle your queries that makes the Answers pages as vibrant and informative as they are – and we've got lots of ideas that we'll be introducing over the next few months to make sure that Amiga Answers stays the most exciting and readable problem-solving section of any Amiga magazine.

So, who are the experts that we've got chained to their computers?

Well, if you've got a problem that involves the intricacies of AmigaDOS, then Mark Smiddy will be offering his words of wisdom. He's also your man if you've got a query over any business-related package.

Gary Whiteley will be the chap we put on the spot if you want to know more about an aspect of video, or simply want advice on the best monitor to buy or how to connect it up.

Hardware posers are Toby Simpson's forté, and if you want to discover more about accelerator cards – and which in particular would be best suited for your needs – then pin back your eyelids and get a retina-load of Toby's expertise. Toby also holds forth on matters of programming – assembler and C especially.

Need some advice on which DTP package to buy, or how to drive it? Then check out what Jeff Walker has to say and you'll soon be a design maestro too.

Jason Holborn is our house-trained AMOS chappie – and nothing makes him happier than poring over readers' code. For good measure, Jason also has an encyclopaedic knowledge of PD software – when he can't sleep it's Fish disks that he counts, not sheep.

Well, now that you know who the team are it's down to you. Keep those problems pouring in. Hope that you enjoy this month's selection.

Happy computing,

Note: the symbol ↵ in listings means *do not* type a return – the line is simply too long for our narrow columns

DESKJET UPGRADE?



I've owned a DeskJet 500C for about a year, and now the 550C has been released. My questions are: Is there any way I can upgrade without selling my 500C, and are *Turboprint Professional* 2.0 and *Wordworth* 1.1 compatible with the 550C?

Paul White
Edinburgh

No, Paul, I don't know of any Hewlett-Packard trade-in deals, although it's perfectly possible if you look long enough that you might find a dealer willing to do a part-exchange.

Turboprint Professional 2.0 does not come with a DeskJet 550C driver, but IrseeSoft has said that it will write one. I guess we'll have to wait for version 2.1 for that. But remember that these are *Turboprint* printer drivers, not standard Workbench Preferences drivers.

Wordworth prints via Workbench Preferences, so it will work with any printer for which there is a Preferences driver. The only 550C Preferences driver I know of comes with a package called *Studio*, from JAM ☎ 0895 274449. ***JW***

HIT THE NORTH



I have recently acquired *Mastering Amiga C* but cannot get the following listing from Chapter 4 to compile cleanly...

```
#include <stdio.h>
/* convert inches to feet */
#define START      0
#define END        24
#define STEP       6
#define FACTOR     12.0
float inches_to_feet(int ↵
 inches);
main()
{
int inches;
printf("%s\t%s\n","inches",↵
 "feet"); /* print heading */
for(inches=START; ↵
 inches<=END; ↵
 inches=inches+STEP)
   {
    printf("%d\t%.2f\n", ↵
 inches, ↵
 inches_to_feet(inches));
   }
printf("End of program\n");
}
/* ———————————————— */
float inches_to_feet(int ↵
 inches)
{
float result;
result=inches/FACTOR; ↵
 /* simple function to ↵
 convert inches to feet  */
return(result);
}
```

Any ideas or suggestions as to the cause would be welcome.

S. Smith,
Sunderland
Tyne & Wear

The compilation errors are caused by you using the ANSI C disk form of the program directly instead of modifying it as explained in the disk file 'Compiler' doc notes. The listings in *Mastering Amiga C* have to be used with both ANSI C and K&R C compilers, and there simply wasn't the room to include both versions of all programs. To convert the ANSI C listing into a *NorthC* compilable form is not difficult and, as mentioned, details are provided on disk. If you follow the required steps you'll end up with this K&R style, *NorthC* runnable, version:

```
#include <stdio.h>
/* convert inches to feet */
#define START       0
#define END         24
#define STEP        6
#define FACTOR      12.0
/*  float inches_to_feet.↵
 (int inches); I've commen-↵
 ted out this prototype and ↵
 will declare the function ↵
 as using the 'old style' ↵
 K&R C form */
main()
{
float inches_to_feet(); ↵
 /* declare function as ↵
 returning a float value */
int inches;
 printf("%s\t%s\n","inches",↵
 "feet"); /* print heading */
for(inches=START; ↵
 inches<=END; ↵
 inches=inches+STEP)
   {
    printf("%d\t%.2f\n", ↵
 inches, ↵
 inches_to_feet(inches));
   }
printf("End of program\n");
}
/* ———————————————— */
float inches_to_feet(inches)
int inches;
{
```

JARGON BUSTING • JARGON BUSTING

ANSI C – a standard for the language devised by the American National Standards Institute, which differs from some areas and clarifies others of the original definition of C given by the language's creators.

C – a compiled language designed primarily for systems programming. It was used to write much of the Amiga's operating system, and is used in the writing of many Amiga applications.

Compiler – a means of translating a program to render it understandable to the computer. A compiler translates the whole thing into machine code before it is run.

Printer driver – a program that sits inbetween any applications program producing output and the printer. It converts any codes describing text and graphics format into a form suitable for a specific printer.

```
float result;
result=inches/FACTOR; ↵
 /* simple function to ↵
 convert inches to feet  */
return(result);
}
/* ——————————————————— */
```

PAO

CAN IT BE DONE?

My mother is starting a magazine – 100 pages, full colour – and I would like her to use my Amiga 500. Is this possible? What hardware and software would be necessary?

Ricardo Carvalho
Portugal

Yes, it's possible, but you'll need quite a lot of extra hardware.

To start with you'll need lots of extra memory – the more the better, but at least 8Mb. Then you'll need a very big hard disk, at least 300 to 400Mb, to handle all the scanned images and finished PostScript files for each issue of the magazine. And the basic Amiga isn't really quick enough for professional desktop publishing, so an accelerator will be needed – a 68030 at least, but a 68040 would be better.

The simplest way to kill all these birds with one stone is probably the GVP A530 accelerator upgrade – and you could win one on page 122!

The main trouble is that your Amiga 500 is an old one with only 512k of graphics (Chip) memory. Desktop publishing is extremely graphics-intensive, and you really need at least 1Mb of graphics memory – 2Mb is much better. It's possible to alter the Amiga 500 motherboard to accommodate 1Mb of graphics memory, but it would be a lot simpler, and probably less expensive all round, if you sold the Amiga 500 and bought an A3000.

You'll also need a decent monitor. While it is perfectly possible to desktop publish on a cheap 1084 (or equivalent) monitor, life is made a lot easier by the higher resolution of a multisync monitor.

Software-wise you'll need a professional desktop publishing program that is capable of producing PostScript colour separations. The choice is between *Professional Page* and *PageStream*. In my experience *Professional Page's* PostScript output is more flexible and more trustworthy than *PageStream's*.

If you were thinking that perhaps your mother could produce her magazine 'cheaply' on the Amiga, then I think you can see that this is not the case. You *can* produce professional, full-colour magazines on the Amiga – indeed there are several European full-colour computer magazines produced almost entirely on the Amiga, and the total cost of the equipment required is probably less than half the equivalent Macintosh set-up (which is what almost all professionals use) – but it's still going to cost a pretty penny. ***JW***

NEW ROMS FOR OLD



I am a relative beginner in the computing world. I bought a second-hand A500 thinking I didn't want to spend too much money on something I wasn't sure I would like, and I love it! My problem is that I would love to upgrade it to Workbench 2 and get a ROM sharer. After looking through the Ads, I'm puzzled about which equipment I need to buy. Which is the best buy, and which make is best?

J. Wilcox
Bristol

A ROM sharer is a small circuit board or 'daughterboard' with two empty IC (integrated circuit) sockets on it, a couple of components, and either a short ribbon lead with an IC plug on the end or an IC plug mounted on the underside of the daughterboard. Since your Amiga is second-hand, you have no problems with warranties, so open up your Amiga and identify the Kickstart ROM (If you are a little unsure about this, refer to the diagram on page 86 of *Amiga Shopper* 24. If you need to order this issue, see page 95.)

You then need to remove the Kickstart ROM, and insert the IC plug into the empty socket. The two empty IC sockets on the daughterboard are for the Kickstart 1.3 and the Kickstart 2 ROMs respectively. Some ROM sharers require an externally-mounted switch, which switches between the ROMs. You need to turn the power off on your Amiga to do this. More recent ROM sharers have a short cable which clips on to one of the legs on the Gary IC. This enables you to switch between ROMs using a keyboard command – no need to turn off the power. There are several on the market, and the range is growing monthly. You also, of course, need to buy the Kickstart 2 ROM. ***WR***

JARGON BUSTING • JARGON BUSTING

Modulator – a device which combines the output signal from a video source with a high-frequency signal. This is required for input into TVs, which expect to receive their signals at very high frequencies.

PostScript – a powerful mathematical language used to describe graphics and text images to compatible printers. Because it does not rely on a pixel system, objects so described can be scaled and rotated without distortion or loss of detail.

RAM – Random Access Memory, so called because any part of it can be accessed immediately rather than having to search through from the start of memory to the point of interest. RAM is used to hold programs while they are being executed and temporary data. The contents of RAM are lost when the power is switched off.

ROM – Read-Only Memory is used to store essential programs, such as Kickstart and many of the library routines. These do not have to be re-loaded each time the Amiga is switched on because ROM retains its contents without power. No new information can be written to ROM.

TURN IT DOWN!

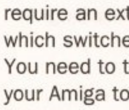
I have just upgraded to an Amiga 1200, having previously owned an Amiga 500+, and I am very happy with it apart from one thing. The sound output of the 1200 is much too high, causing the sound to distort at higher levels. It seems to make no difference whether I try using the SCART or RF modulator. I didn't have this problem with my 500+. Can you offer any help or advice?

Mark Ingle,
Leicester.

First the bad news, then the good news, Mark. Commodore Technical informs us that the first series of 1200 motherboards were equipped with an audio output signal considerably higher than that of the previous models, which explains why you discovered distortion when your machine was played through a hi-fi with an input level acceptable to a 500+.

However, the good news is that if you contact Wang, the official service and warranty agent for Commodore, on ☎ 081-231 3700, you can get a friendly service engineer to come to your home under the on-site warranty and carry out a free upgrade for your machine which will reduce the output signal level to the same as per your 500+, making your wonderful noises crystal clear once more. ***MS***

CRASH BARRIER?



I have expanded my A500 to 2Mb using the Zydec Mega-board, which seems to work without problems apart from crashing some of my older games. However, I also find that *KindWords*, the word processor in my integrated office package, tends to crash a lot, especially when I have loaded the spelling checker into memory. The first check proceeds all right, but after I have done some more work I get an error such as: "error reading dictionary" or "dictionary could not be found". I thought *KindWords* might be at fault so I tried *Mini Office* instead, but this has similar problems.

Is it the software, the machine or the Megaboard at fault? When it crashes the power light flashes and I get a guru message. Is this because I only have 0.5Mb of Chip RAM fitted? If this is the case how can I get more Chip RAM and can I do the modification myself?

Next an interesting query. I have a lot of old quarter-inch audio tapes recorded in the '50s at the broadcasting speed of 15 inches per second. The reel-to-reel deck I own has a top speed of half that. Therefore would it be possible to use a sound sampler to adjust the speed and copy them back to tape or even disk?

Finally, while trying to make my own bootable disk as described in *Mastering AmigaDOS 2* Vol. 1, when I type "Install Df0:", even with a formatted disk in Df0: I am always asked for a Workbench and then told the disk is write-protected. What am I doing wrong?

Tony Curran
Dalkey, Co. Dublin

If I had a pound for every person who wrote to *Amiga Shopper* asking about *KindWords 2* I think I could become a tax exile. *KindWords 2* is appallingly bad and should be given a decent burial. *KindWords 3* is a complete rewrite, shares none of the same code and is not remotely similar. Never confuse the two. *Mini Office* on the other hand should be a lot more stable.

It is just possible, therefore, that the problem might lie with the Megaboard, and the only way to be absolutely certain is to remove it and work with 1Mb. Adding extra Chip RAM is not usually a problem, although it does require some surgery to the board. I cannot be 100 per cent certain the Megaboard

continued on page 36

PRINTERS

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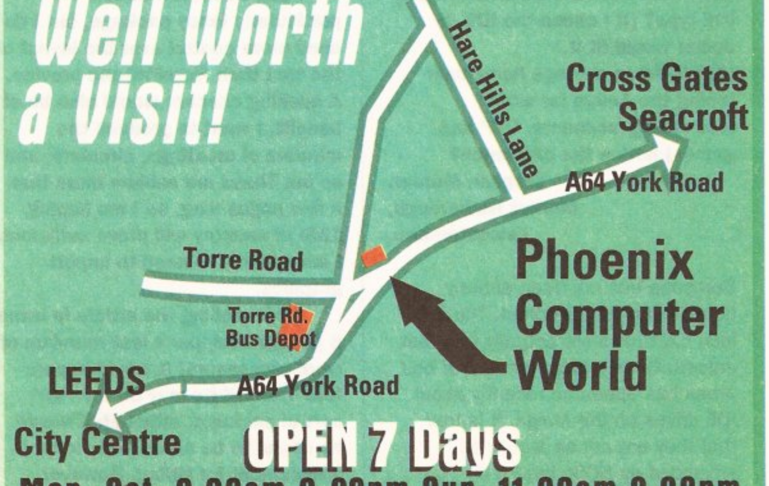
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would work with 1Mb Chip (to give 1Mb Chip and 1Mb Fast) but I can see no reason why not. (Evesham Micros' technical bods are on 0386 40303 and they should be able to give you a definitive answer.)

As far as your reel-to-reel deck is concerned I think you would find it an insurmountable task to sample audio to disk, double its frequency and restore it to tape a few seconds at a time. There is no doubt it could be done, but I feel a specialist could do the job a lot faster for you. You could also try approaching a local independent radio station – they may find the tapes worthwhile for their curiosity value and in this case they'd probably do the job free of charge.

The instructions in *Mastering AmigaDOS 2* assume two things: either you have two drives or you have read and understood some earlier text. This particular section could have been done better, I'll admit. The easiest way around the problem is to enter the following before you try the instruction:

```
RESIDENT C:INSTALL
```

That will copy the instruction to RAM and allow you to install the disk in Df0: without having to swap disks in the first place. Better still, invest in a second drive – you'll soon be wondering how you ever managed without one! ***MS***

SPEEDIER SCSI?



The A1200 really is as good as it's cracked up to be (if not quite as fast), but it's obvious that Workbench 3.0 needs a hard disk to get the best from it.

Everyone says that the 2.5-inch IDE drives are too slow and that I should wait for a SCSI adapter and buy an A500 type drive.

(a) What are the advantages of a SCSI drive over the internally-fitting IDE type? (If I chose the IDE, a dealer would fit it.)

(b) Would an average home user (using the Amiga for word processing, accounts, DTP and games) notice the difference?

Stephen Mercer,
Market Harborough,
Leicestershire.

Someone has not been entirely honest with you, Stephen. The 2.5-inch IDE drives are actually very fast indeed. Quite a large amount of bad press has appeared recently about IDE drives on the Amiga. It is true that they are not as fast or as advanced as SCSI, but I'd be amazed if you could really notice the difference as a home user – and besides, they are cheaper than their SCSI counterparts, and the interface is built-in, so you only need the drive.

SCSI is faster. It's also cleverer, and more expensive. It also depends a great deal on the type of machine the drive is in. An IDE drive on an Amiga is quite an impressive beast. I strongly recommend you look into the IDE option – at least get a demonstration. Also, look at the article about installing hard disks in your A600/A1200 that we ran in *AS* 23 for more information on the subject. If you missed that issue, our back issue service is on page 95. ***TS***

JARGON BUSTING • JARGON BUSTING

Compugraphic fonts – rather than a simple bit-mapped image of each character, which grows more jagges with magnification, a Compugraphic font represents the shape of each character within the font as a mathematical equation of the outline. Consequently, as the magnitude of the character is varied in printing, no information is lost and the result always looks smooth.

Font – the group of letters, numbers and special characters that comprise one variation of typeface – for examle, 12pt Times, 12pt Times Bold, 12pt Times Italic. Sometimes (loosely) used in desktop publishing to refer to a type family.

SCSI – Small Computer Systems Interface is the standard used for connecting hard drives, CD-ROM drives and tape back-up units to computers.

WHICH WP?



I have struggled with the limited capabilities of *NotePad* for long enough, and I have tried PD programs which crash, fail to print or refuse to word-wrap. I would now like to buy a commercial package.

I cannot afford very much (£50) and definitely cannot rush out and buy a hard disk or memory expansion (I have 1Mb). Nor can I afford to replace the 18-pin NEC Pinwriter P2 which I acquired for nought, having succeeded in getting this to work with the CBM-MPS1000 driver.

I don't believe I need a particularly fancy package, but I do need more control over the layout of the text than *NotePad* can provide. A spelling checker would also be of benefit. I want to produce the minutes of meetings, circulars, and so on. These are seldom more than a few pages long, so I am hoping 1Mb of memory will prove sufficient. I am unlikely to need to import graphics.

After reading the article in issue 6 *[Amiga Shopper's* last round-up of word processors] it would appear that *TransWrite* may be the right sort of package, although it would be useful to be able to mix fonts in a document for titling. However, this article is over a year old and some of the tested word processors have been updated. I would appreciate your advice.

David Purcell
Worthing
Sussex

We aim to please: this very issue features an up-to-date word processor round-up (see page 14), so you know what the current packages can do and how much they cost. The ones that import graphics are the same ones that let you mix fonts on the page. Back then they were doing it with low resolution Amiga bitmap fonts; these days the best ones are doing it with high resolution scalable outline fonts.

But the prices haven't changed. Such word processors cost £100 or more.

With a budget of £50, *TransWrite* is still your best choice. You could look at *KindWords 3* (which is a cut-down version of *Wordworth*), but keep in mind that bitmap fonts and scalable fonts take up memory, both to display and to print, particularly in large sizes. You may well find that 1Mb will restrict what you can produce in *KindWords 3*. ***JW***

INVISIBLE TOUCH



In some shopping centres I have seen information computers without keyboards which are operated simply by pressing boxes on the screen. Is it possible to write a program for the Amiga that will do the same job? Do lightpens use the same technology?

Patrick Harrop
Bromley,
Kent

It isn't possible to get such a system up and running unless you've got the neccessary hardware. In the case of the 'point of information' systems you're referring to (the techies call them 'POIs'), you'd need a touch-sensitive screen adaptor. This is simply a transparent screen that fits over the front of the Amiga's monitor. Unfortunately, touch-sensitive screens are rather expensive – although I haven't actually seen one running on an Amiga, similar devices for the Atari ST and PC machines cost around £200 – and don't forget that you also have to add the cost of a monitor on top of this.

A lightpen might perhaps be a better bet, although they are prone to vandalism if you intended using your POI in a real-life environment – because the pen is attached to the machine via a cable, some people just can't resist stealing them. Your best bet would be something like the 'Concept Keyboard' that we covered back in *AS* 7 – an A4-size touch-sensitive pad with an array of 256 cells on its surface. Pressing one of these cells emulates a keypress (or sequence of keypresses) on an ordinary Amiga keyboard. This is very similar to the pressure-sensitive pads that most information systems use – not only are they robust, but they're water-proof too. What's more, it would probably be considerably easier to write driver software for a Concept Keyboard than it would be to drive a lightpen or touch-sensitive screen. For information on the Concept Keyboard, contact HB Marketing ☎ 0753 686000. ***JH***

SORTING OUT CG FONTS



As a user of Gold Disk's *PageSetter II* I have bought Volumes 1 and 2 of George Thompson Services' Compugraphic Fonts. I am experiencing one or two problems using them on my dual floppy Amiga 500, which has 5Mb of memory fitted.

It appears that these fonts need to be transferred to *PageSetter II's* PSUtil disk before they can be used. Accordingly I prepared a number of copies of PSUtil, with the following files deleted to provide space for the CG fonts: all files pertaining to bitmap fonts, all NewsLetter files, HDInstall, HELP-Install, Install-Proc, and DiskMount.

To the space now available on the copies of the PSUtil disk I copied the appropriate fontname.lib, fontname.metric and fontname.atc files for a variety of CG fonts, putting a different choice of fonts on each disk.

My first problem arose when I tried to use in the same document a mixture of fonts which were not all on the same copy of the PSUtil disk. *PageSetter II* would not recognise any copy of PSUtil apart from the one loaded first, so I could use only those fonts installed on this particular disk. How can I use the fonts on the other disks?

My second problem concerns

font caching. When I made my first use of a copy of PSUtil with the GTS CG fonts installed, I printed the document, before saving it, only to have the program hang. On the next occasion I tried to save the document before printing. This time I got the message "Writing cache to disk" followed by "Disk full", and the program hung once again.

For my next attempt I used a PSUtil disk that was only 85 per cent full, and was successful.

I note from the *PageSetter II* manual that the font cache is written to disk when the internal cache fills up or when you quit the program. What happens if there is not enough space on the PSUtil disk to take the complete font cache? Does the program write as much of the cache to disk as the space available allows and leave the program still functioning, or does it crash?

Is it possible to prevent an attempt to write a font cache to disk? I realise that this could slow down the creation of documents, but I have to say that time is not of the essence. I can afford an extra four or five minutes, but not the cost of a hard drive. Could the RAM disk be helpful in any way?

Dr Frank Jones
Duffield
Derbyshire

PageSetter II looks for its Compugraphic font files in a 'logical' device named 'CGFonts:' – a logical device being one created with the **Assign** command.

In the startup-sequence in the S directory of the *PageSetter II* program disk, you'll see three Assign statements, two of which we are interested in: "Assign CGFonts PSUtil:CGFonts" and "Assign CGCache: CGFonts:CGCache". These statements mean that the CGFonts: logical device is assigned to the CGFonts directory on the PSUtil disk, and the CGCache: device (where the caches get saved) is assigned to the CGCache directory on the CGFonts: device – in other words the CGCache directory that is inside the CGFonts directory on the PSUtil disk.

You are free to change these assignments however you like, but the easiest thing to do when working from floppies is to create disks that are called CGFonts and CGCache – these, when mounted (put in the disk drive, that is) will automatically become CGFonts: and CGCache: devices. Note that it is the colon after the name that signifies a device.

You would not need CGFonts and CGCache directories on these disks; everything can be saved in the root directory. But as well as the font files there is one more file that must be present in CGFonts:, the file named CGT, so make sure you copy this on to every CGFonts disk you create.

If you are booting from the *PageSetter II* program disk, as opposed to Workbench, then you will need to remove the CGFonts: and CGCache: Assign statements from the S:startup-sequence file on the *PageSetter II* program disk.

When the *PageSetter II* program first loads, it investigates the CGFonts: device to see what CG fonts are available. Whatever fonts it finds in CGFonts: are the only fonts that will be made available to you, so it is not possible to read another font from another CGFonts disk after the program has loaded. One way around this would be to create a CGFonts directory in the RAMdisk (before running *PageSetter II)* and copy into it the CGT file and all the files for the fonts you want to use. Then from the CLI use "Assign CGFonts: RAM:CGFonts". Then run *PageSetter II*. All the fonts in RAM:CGFonts will now be available to you.

This will of course reduce the amount of memory available to *PageSetter II* for creating documents, but you have 5Mb and can easily spare 2Mb for a CGFonts: device in RAM.

You have two ways of dealing with font caching to disk. First, you can switch it off completely by using Compugraphic Font Control in the Preferences menu. Change the Max Disk Cache Size to zero, press Return and hit the OK button. Now *PageSetter II* will create the caches in memory, but will not save them out to disk. However, this must be done every time you run *PageSetter II* – it cannot be set up once and saved as a 'preference'.

Alternatively, use a special CGCache disk, as described above, remembering to remove the CGCache assignment from the S:startup-sequence file on the *PageSetter II* program disk if you are booting from that disk. Using this method, when *PageSetter II* wants to save the caches to disk it will put up a requester asking you to place volume CGCache in any drive.

Because there was no current CGCache: device when you ran *PageSetter II,* no font caches from a specific disk will have been opened, so *PageSetter II* won't demand a specific disk for saving. Provided the disk is named CGCache, *PageSetter II* will save the cache to it. But then these disk caches are not actually being used, so this method is a bit of waste of time, and if the disk gets full you'll be back to the "Disk full" message and the crashing problem. The crash is something that shouldn't happen, but does – it's a bug. ***JW***

WHERE'S THE TEXT?



I have bought *NorthC* and have printed out and read all the files on the disk (I think) but although I've successfully compiled the 'Hello World' type programs I'm having some trouble with my latest efforts, namely the following program...

```
#include <stdio.h>
main()
{
   float average;
   int a,b,c,d;
   a=b=c=d=average=0;
   printf("\n Enter three ↲
 numbers \n");
   scanf("%d %d
%d",&a,&b,&c);
   d=a+b+c;
   average=d/3.0;
   printf("\n The average ↲
 is %0.2f\n",average);
}
```

When I run the program the linefeed on the first printf() occurs but the message doesn't appear until after I have entered three numbers. Then the resonse is:

```
Enter three numbers
The average is xxxx
```

with xxxx being correct to two decimal digits. Why isn't the 'Enter three numbers' prompt coming up before I enter them and how can I get *NorthC* to accept floating point variables from the keyboard?

Martin Davis
Guisborough
Cleveland

These missing **printf()** output problems occur because output is being buffered rather than sent out directly. Try putting this statement:

```
fflush(stdout);
```

immediately after your first **printf()** command. This will force any buffered data to be printed. Your program actually worked fine on my A2000.

The **scanf()** problem is a little more difficult to solve because *NorthC's* **scanf()** function doesn't currently support floating point number input at all. One would normally expect to get around this by reading the floating point input data as a string, and then using a string-to-number conversion function to convert the string to floating-point form. ANSI C provides a function called **atof()** which can do the job, but unfortunately *NorthC's* documentation says that this also has not been implemented. Luckily there's another solution – the **amiga.lib** library contains fast-floating-point (ffp) to string conversion routines. (These work well with *NorthC* because *NorthC* uses the ffp format internally). The bottom line is that you can use **scanf()** to input the number as a text string and use the **afp()** amiga.lib routine to convert the text string to a number.

Suppose, for example, that you wish to write a program which converts a Fahrenheit temperature to the equivalent degrees centigrade by collecting a floating point number using this sort of code:

```
  printf("enter degrees in ↲
 fahrenheit:\n");
  scanf("%lf, &temperature);
```

Since we can't use **scanf()** we need to read the input number as a text string. The following example does this, converts the input to ffp number form, does a Fahrenheit to centigrade conversion, and then uses **printf()** to display the result...

CAN'T BE DONE



I will buy a Power Scanner soon, but first I have a few questions that my local dealer is unable to answer.

(a) My father owns a 80386 SX MS-DOS machine with VGA and Windows and he wants to know if it will be possible to use the Power Scanner on his computer.

(b) In your review in issue 14 you said that there is some sort of throughport on the interface, for keeping the printer connected. Can it be used for the MasterSound sampler too?

Jurriaan Knol
Bovenkarspel
Netherlands

(a) The short answer is no. The long answer is: The scanner head itself could be used, provided a suitable interface and software could be found. But then when you buy a suitable interface and software, it tends to come in a package with a scanner head as part of the deal, so your father won't need the Power Scanner one.

(b) No again. The interface's throughport was designed specifically with printers in mind – that is, it has only output lines for data going out to a printer, not input lines. Anything that tries to input to the throughport is likely to make the interface think that the scanner is being used, which, if it isn't the scanner that's being used (because, for example, it's a sampler that's trying to input data), will normally result in a crash. ***JW***

```
#include <stdio.h>
#include <math.h>
char data_buffer[20];
float temperature;
main()
{
float afp();
printf("Enter degrees ↵
 Fahrenheit\n");
scanf("%s",data_buffer); ↵
 /* read number as string */
temperature=afp(data_buffer)↵
 ; /* convert to ffp */
temperature=(temperature-↵
 32.0)/1.8; /* F to C */
printf("%f\n",temperature); ↵
 /* and display */
}
```

If you are new to *NorthC* you may have problems with the compiling/linking stages, so here are a few extra notes. One approach is to compile, but *not* link, the code using a cc command line such as...

```
cc -c -otest.o test.c
```

This takes a source code file, called **test.c**, and produces a file called **test.o** which is the object code module required by the linker. To create a runnable program this file needs to be linked and because we've used the amiga.lib library **afp()** function it is necessary to get access to amiga.lib during the linking stage.

Assuming that amiga.lib has been copied into the **NorthC:clibs** directory you can carry out the linking using a blink command line like this:

```
BLINK crt0.o + test.o TO ↵
test LIBRARY clibs:libc.a ↵
clibs:amiga.lib
```

As you'll see from the *NorthC* documentation, the **crt0.o** file is the *NorthC* startup code, and **libc.a** is *NorthC's* own C library file.

Another, slightly easier, approach is to use *NorthC's* **cc** program to pass details of the libraries that must be searched during linking. There is a 'b' flag mentioned in the documentation that allows library names to be passed to the linker. Assuming that the **libc.a** library *and* **amiga.lib** are both present in the directory assigned to clibs: we would want to pass the command

```
LIBRARY clibs:libc.a ↵
clibs:amiga.lib
```

to the linker. Because this contains spaces it has to be enclosed in double quotes, and the **cc** command line needed ends up looking something like this:

```
cc  -otest -b"library ↵
clibs:libc.a ↵
clibs:amiga.lib" test.c
```

PAO

TO BOLDLY GO

When using Compugraphic typefaces in *Professional Page 3* it is easy to mark a block and then make it bold or italic or whatever.

Now, *Professional Page 3* provides a utility to convert Adobe Type 1 typefaces to Compugraphic. If you look at a Type 1 typeface you will see that it exists in many styles – Courier, Courier-Bold, Courier-Bold-Italic and so on – all of which I assume to be essentially the same file, each with a bit of PostScript language defining the width or the slant or whatever.

I assumed that converting the base Type 1 typeface would be sufficient, because *Professional Page* could apply its own formatting to the new Compugraphic typeface created. But this does not appear to be the case – the text will neither slant nor bolden. Is this working as designed, an undocumented program restriction, a user cockup, or what?

Mike Lanng
Hatch Warren
Hampshire

It's working as designed. The bold and italic (and so on) versions of a typeface are not merely mathematically altered versions (thickened, slanted, and so on) of the "base" or plain typeface, they are completely different designs, so they require completely separate font definitions. Yes, it's possible for example to slant an upright or Roman typeface to approximate italics, but this will not be a correct italicised typeface.

This means you need a separate Type 1 font definition file and usually a separate metrics file for each typeface in the type family. The same rules apply to Compugraphic typefaces, although here it is possible for a type family to share the same metrics file.

When a type family does share the same metrics file, it is possible in *Professional Page* to apply the Bold and Italics style options from the Typeface menu to the plain typeface, and thus get the text to appear in bold or italics – provided the metrics file contains the spacing data for the bold and italics (or whatever) versions. If a proper bold font definition file of the typeface is available (Courier-Bold.lib for example) then that data is used; otherwise *Professional Page* will mathematically thicken the typeface (or slant it, in the case of italics).

The CGTimes and CGTriumvirate typefaces that come with *Professional Page* have information contained in their metrics files for plain, bold, italic and bold-italics versions of the typefaces, which is why you can get bold and italics with these two typefaces, even though you don't have the proper bold and italics font definition files. The other Compugraphic typefaces supplied with *Professional Page 3* contain only information for the plain typeface, which is why the bold and italics style options don't work with these. The same goes for any Type 1 typeface you convert to Compugraphic with *FontManager* – the metrics file created contains information for only the particular typeface converted.

So, having the proper font definition files for each style of typeface in the type family is the proper or more professional way to to do it, and mathematically slanting or thickening a plain typeface is the amateur or less aesthetic way – a quick hack, if you like, to get around the problem if you can't afford or haven't got the real thing. ***JW***

PD QUESTION

1. Where can I lay my hands on a PD program called *ILBM.Library?*
2. Can you recommend a decent PD font editor? I've tried using the *FED* font editor on my Workbench disk, but have found it to be rather unsuitable.
3. A general question. Is there a printing bureau that can print out full colour IFF images on a colour laser printer? I found a place local to where I'm working that has a very sexy Apple Mac setup which they use to print PostScript files for customers. At around £10 per page, though, they've priced themselves right out of the market!
4. I think I have a faulty RAM chip inside my hard drive. Having installed 1Mb of extra RAM inside my A590, I've started to suffer from crashes on a regular basis. When I ran the A590 RAM test software, it informed me that certain chips had 'failed'. Which chips are faulty?
5. I actually bought the chips from Diamond Computers last year, but I no longer have the receipt. When I asked Diamond for replacement chips, they informed me that they could not change the chips unless I had a receipt. Where do I stand legally?

R Lester
Hull

1. No problem. The disk you need is Fish 393, which is available from most good PD libraries.
2. To be perfectly honest, I haven't yet seen a decent PD font editor that rivals good old *FED*. If you've got a bit of excess cash hanging around, you could treat yourself to Software Toolworks' excellent *Calligrapher* package. *Calligrapher* can edit not only standard mono bitmapped fonts, but colour fonts too. It's been available for absolutely years now, so I'm sure you should be able to pick up a copy for next to nothing these days.
3. There are several printing bureaus that cater specifically for Amiga users. You could try BJ Print and Graphics on 0803 666003. (Any others out there, let us know and we might print a directory in a future issue.)
4. We looked through the test sheets that you sent, but the results are somewhat confusing. On test 1, the second 512k of RAM seems to be faulty, whereas on the second test, only two of the chips were faulty. My advice would be to replace all four of these chips (U18 through to U21).
5. Technically, the law doesn't require you to produce a receipt if goods you have bought are faulty, though it's perfectly reasonable that a shop would expect proof that you did buy the goods there and not somewhere else. However, because the chips have only recently become faulty after several months' use, it's understandable that Diamond is refusing to change them without a valid till receipt, if only to prove how new they are and see whether they are still covered by any guarantee. If they had been faulty when you first

JARGON BUSTING • JARGON BUSTING

IFF – Interchange File Format is a means by which data from different graphics or sound sampling programs is saved in a compatible way. It allows data to be exchanged between programs very easily.

Linker – a program which joins together the various segments of code produced by a compiler, along with any relevant library routines, and produces a finished, executable program.

Startup-sequence – a program which is executed every time the Amiga is switched on and after every reset. It sets up the system so that it is usable from Workbench, and may be customised by those who have unusual hardware or software requirements.

Typeface – all sizes of a particular type family and style – for example, *Times Italic*, *Helvetica Italic*, `Courier Bold`.

bought them, then you'd be on secure ground, but you've been happily using them for many months. I'm afraid you're the loser here. It's surprising just how many people do throw receipts away and I really can't stress enough how important it is to hang on to them just in case anything goes wrong. ***JH***

PAGESETTER II TIPS

You've mentioned before about the memory requirements when printing out DTP documents with *PageSetter II* and *Professional Page,* and have quite rightly advised re-booting and re-loading the page before printing so as to avoid fragmented memory.

Well, since I've got only 1Mb of memory, I go one step further.

Using *PageSetter II,* when I've created a page I save it to disk, do a cold re-boot, and run *PageSetter* until I've got the blank screen, no page defined. I then open the required page and immediately hit the F10 key, the keyboard short-cut for the Print requester. This causes *PageSetter II* to go into print mode before displaying the page on-screen, thus saving even more memory, especially if using Compugraphic fonts.

Only once has this not allowed me to print the page I wanted. That time I printed the top half first, fed the paper back into the printer and then printed the bottom half.

Ian Heath
Upton,
Wirral

Thanks for those excellent tips, Ian. There's another way you can grab a little extra memory for printing. After switching the computer off to cold re-boot, remove your external floppy from the port. (Switching it off via a switch on the drive sometimes isn't good enough.) This will reclaim about 30K of memory. You could also remove from your startup-sequence anything that isn't absolutely necessary – stuff like SetClock, FF, Echo commands, Residents, and Assigns, Mounts and Paths that aren't needed. ***JW***

DARK STAR

The colour printouts on my Star LC-200 printer using the Star 9 Plus driver do not give a true representation of the colours that are actually on-screen.

I have sent you an example printout, which is the reference palette from *Deluxe Paint II,* made up as explained in the *Deluxe Paint II* manual. I have adjusted (switched on/off) the RGB colour correction buttons in Preferences but the difference is slight.

Without having to buy any extra software (like *Turboprint)* are there any adjustments that can be made in order to give more of a true colour representation?

B Pickard
Southmoor,
Co Durham

What you really need is greater control over colour correction, and for this you *do* need extra software, something like *Flexidump, Turboprint Professional* or *TruePrint/24.*

The reason for the dark or muddy printouts is something called 'dot gain' – a term that describes how much bigger physically the pins are than the resolution at which the printer prints. For example, your LC-200 has a top resolution of 240 by 216 dots per inch (dpi), which suggests that each dot is one 240th of an inch wide and one 216th of an inch high. In actual fact each dot is much, much larger; the printer manages a higher resolution by overlapping individual dots.

To reduce the muddiness you need to prevent the dots overlapping, and this is achieved by printing at a lower density, which of course lowers the output resolution, but since the pictures you're printing from *DPaint* are created on-screen at 75 dpi (ish) anyway, this doesn't matter much.

The Star 9 Plus driver is able to print at seven different resolutions. Density 1 is 144 by 144 dpi; Density 2 is 120 by 144; Density 3 is 240 by 72; Density 4 is 120 by 216; Density 5 is 240 by 144; Density 6 is 144 by 216; Density 7 is 240 by 216.

Density 1 is good because the dots are square and the resolution is fairly high. It's possible that you might get slightly less muddy print-outs from the EpsonX [CBM_MPS-1250] driver (on Extras) printing at Density 1, which for this driver is a resolution of 120 by 72 dpi, but each dot will be a short vertical line instead of a symmetrical dot.

Changing the dither pattern can help as well. Generally 'Floyd-Steinberg' dithering is best for colour output – it attempts to get rid of any regular patterns in the dither. ***JW***

YELLOW PERIL

My Swift 9 colour printer will only print out in yellow with the colour kit fitted, despite *Citizen Print Manager* being installed. What is wrong?

M J Blezien
Boxgrove,
W Sussex

It sounds like the printer mechanism that moves the colour ribbon up and down isn't working. Your best bet is to contact your dealer or phone Citizen on 0753 584111. ***JW***

PIN MONEY

For no apparent reason my Star XB24-10 printer has started printing tramlines.

About every third of an inch there is a thin, white horizontal line across the printout. I have changed the cable and ribbon, but I still get the same problem.

Paul Beaulieu
Widnes, Cheshire

Bad news, Paul. It looks like one of the pins in your print head may be either stuck or broken. If this is the case, then the tramlines should appear on text printouts as well as graphics printouts. Check your manual and put the printer through its self-test. If the tramlines are still there, then you'll probably need a new printer head. Your next step should be to contact Star Technical Help on 0494 471111. ***JW***

DRIVE TRAIN

I am considering the purchase of an Amiga A1200 but I have a few questions like I'd like you to answer before I take the plunge.

1. If the A1200 comes equipped with a built-in IDE hard drive interface, does this mean that I can fit a bare drive, format it and then start using it?
2. Does Datel Electronics intend to release an Action Replay cartridge for the A1200?
3. Is GVP planning to adapt its brilliant range of hard drives to work on the A1200?

Paul Roberts
Southampton, Hampshire

1. Yes, providing that you buy an IDE hard drive with all the necessary cabling and formatting software. For more information, check out the feature on connecting a hard drive to an A1200 in *AS* 23.
2. At the time of writing, Datel has not confirmed that an A1200 or A600 Action Replay cartridge is in the pipeline. Knowing Datel, though, I'm sure it'll eventually come up with the goods.
3. I very much doubt that GVP will produce external hard drives for the A1200, simply because the machine already comes equipped with an IDE hard drive controller. Considering the price of IDE drives, it would cost considerably more to produce a SCSI-based external hard drive for the A1200. GVP does intend to support the A1200 though in the shape of processor accelerators, RAM cards and so on. ***JH***

NOT SO BRIGHT STAR

I have been trying to get my monochrome Star LC-20 printer to do a half-decent graphic printout. I've tried several drivers, including the Star 9 Plus driver, and several different Preferences settings using *Graphics Workshop* and *Spectracolor Jr.*

Can you tell me if it is possible to get a clearer printout from the LC-20 than I've managed?

Phil McAndless
Alkrington,
Manchester

Your printouts are so muddy because the dots printed by the printer are so close together. Well, to be perfectly correct, the dots are actually overlapping.

There are two ways to sort out this problem. First, you can print at a lower density – try density 1 or 2 with the Star 9 Plus driver. Second, you can use a printing utility like *Flexidump* or *Turboprint Professional* – these contain special features that enable you to get better-looking graphics printouts. ***JW***

BUT DOES IT WORK?

I have just upgraded from an A500 to an A1200 and have the following questions regarding this new machine:

1. Will *AMOS Professional* work?
2. Does *North C* work?
3. Can I expand the machine beyond 2Mb of Chip RAM?
4. Can I safely link up a null-modem cable to an A500 in order to play games such as *Populous II?*
5. I wish to cure the annoying flicker in HAM modes (provided I do not have to lay out £400). Will any of the following help: an FST television fed directly via SCART; a Philips CM8833 monitor or Hi-Res monitor (as advertised by Trilogic for £230 which claims Amiga and flicker-fixer compatible)?

Richy Crozier
Throckley,
Newcastle-Upon-Tyne

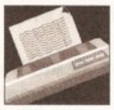
1. Yes – provided you start the machine in a standard Pal on NTSC mode. *AMOS Pro* will not start up if you use Productivity mode – however, with your current display, this will not work anyway.
2. Probably. I haven't tried it, but it's cheap enough to take the risk!
3. No. You can only expand Fast

memory – although this will add more memory to the pool and every little helps...

4. Yes. The RS-232 or null-modem link is a standard – well, insofar as computer hardware can be standard at least.

5. HAM doesn't flicker – interlace screens do. By 'flickering' do you mean a fast jumping up-down or lines of different colours? Neither of these problems can be fixed with any of the monitor/TV combinations you mention. You will need a de-interlacer and an expensive monitor to boot. You'll just have to live with it – sorry. ***MS***

DESKJET LABELS



Is it possible to print labels in continuous roll form on a DeskJet 500C? I have tried via the envelope facility and through the normal paper feed method without success. Perhaps there is an attachment available to perform this task?

Has anyone come up with a proper Amiga printer driver for the DeskJet 500C yet? At present I am using the one from JAM's printer driver disk, but this is not 100 per cent – it keeps ejecting a blank sheet after ending each print cycle.

Robert M Pitts
Meols,
Merseyside

Nope, there's no tractor feed mechanism for the DeskJets, so continuous stationery can't be used. You could try using laser printer labels, although these generally have quite a smooth backing sheet to them and the odd one might slip a bit in the DeskJet.

The HP_DeskJet driver that comes on the Extras 2.1 and Extras 3.0 disks is Commodore's all singing, all dancing DeskJet driver, which is supposed to work with all DeskJets up to and including the 500C. At the moment I know that the 2.1 enhancer packs are on sale in the US, but there's no news about them over here as yet.

If you really want to get the best out of your 500C then you need a package called *Studio,* a printing program which comes with much better printer drivers for all LaserJets and DeskJets, including the three-colour 500C and four-colour 550C. Ask JAM on ☎ 0895 274449. ***JW***

BE FLEXIBLE OVER ACCESS



I own a 500 which has a matching steel monitor stand, and while it makes the whole system look neat and presentable, it is a drag every time I want to connect a peripheral – I have to pull the whole lot out, and struggle to plug and unplug various leads. Is it possible to extend the leads out to the front, making swapping attachments much easier?

Alec Swales
Berwick

I would say this is an extremely sensible course of action, Alec – in fact, I have this arrangement on my own 500. I found it so useful, I did the same for my 2000. Trilogic (☎ 0274 691115) can supply you with the necessary leads. You could, if you wish, be really clever and mount the input ends on one side of the metal stand, bolting them in place. It takes a little bit of care, and a couple of hours' work with a drill and a file. Don't make the mistake of cutting the holes too low down or too near to the front of the case, or your Amiga will snag the cable access. Mount the plates of the sockets on the outside of the case, and you can even pop-rivet them in place. I've done this with the Serial, Parallel, and Disk drive ports. It save ages, as well as immense aggro. Remember, though, how important it is to switch off your Amiga between changes of ancillary equipment The possibility of blowing the CIA chips is very real! If you have sufficient electrical knowledge, you could also mount a switch on the side of the case, set between the power supply and the mains plug. This allows you to place the brick out of sight behind the case, and left permanently switched on. To reset the Amiga you simply have to reach along the side of the case and it's done. It must however be done correctly, and if you are not entirely sure what you are doing, leave this option well alone. It still requires switching off and un-plugging at the mains after a session. One word of advice is that some equipment, such as scanners and sound digitizers, will not work properly when used in conjunction with port extension cables because of electrical interference. ***JW***

JARGON BUSTING • JARGON BUSTING

Crunch – a method of compacting programs and data so that less storage space is used on a disk. When a crunched program is loaded into memory it automatically de-crunches itself into its ordinary, fully-functioning size.

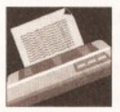
HAM – Hold And Modify is an Amiga graphic mode allowing all 4,096 colours to be displayed at once, with certain restrictions.

Interlace – a method used to double the apparent vertical resolution of the monitor by alternately refreshing the screen at a slight vertical offset, thus squeezing an extra line between each of the lines of a non-interlaced screen.

RS232 – a standard port, known as a serial port because only one bit of information is transferred at a time, used for communicating with other computers, connecting printers, and connecting to modems.

Virus – a small program that can lie hidden in memory or on a disk, duplicating itself on to any disks inserted in the machine, and generally causing havoc. There are many virus killers available in the public domain designed to deal with this menace.

MYSTERY OF AKHTERITE



Every month I get my copy of *Amiga Shopper* through the post and, after reading through it, I take out the articles that are of interest to me and put them in a folder.

Last weekend, while at a car boot sale, I bought an Akhterite 1000 printer, which I was told would work perfectly with my Amiga 500 using the MPS-1000 driver. Alas, when I tried using it with *Deluxe Paint III* and *ProWrite,* I found that a "P" is printed at the left-hand side of the page.

I know this subject was covered in your July issue, but unfortunately I did not save it. I would be most grateful if you could tell me where I might be able to get a manual for the printer, and, most importantly, which printer driver to use.

And yes, from now on I will heed what you say about making sure a proper driver is available before buying the printer.

N Grice,
Llanfairpwll,
Gwynedd

Your letter is in vain, Mr Grice, because I couldn't really help the person in *AS* 15 who was having problems with his Akhterite 1000, and I can't find an address or phone number for Akhterite anywhere. Your best hope is to try the 'generic' driver for text output – that might get rid of the Ps. If it doesn't, then I'm afraid you might have wasted your money, unless someone else is able to help with advice or a manual. ***JW***

COME TO THE CRUNCH



I'm going through floppy disks at a rate of knots and I'm trying to avoid buying more. Can you please tell me where I can buy a decent file cruncher that leaves programs in an executable form? Also, how compatible is the new A1200 with existing software?

Paul Valerio
Blanefield,
Glasgow

What you need is *PowerPacker Professional v4,* available from Europress Software on ☎ 0625 859333 for a very reasonable £14.95. It can compress program and data files to less than two thirds of their original size. As for the A1200, Commodore is quoting the level of software compatibility at around 60%, although this is a rather pessimistic figure. Most of the failures are games, so serious Amiga users will find the A1200 to be very compatible indeed. Obviously there's bound to be a couple of serious titles that don't like the A1200, but I certainly haven't found any yet. ***JH***

TELL ME MORE!



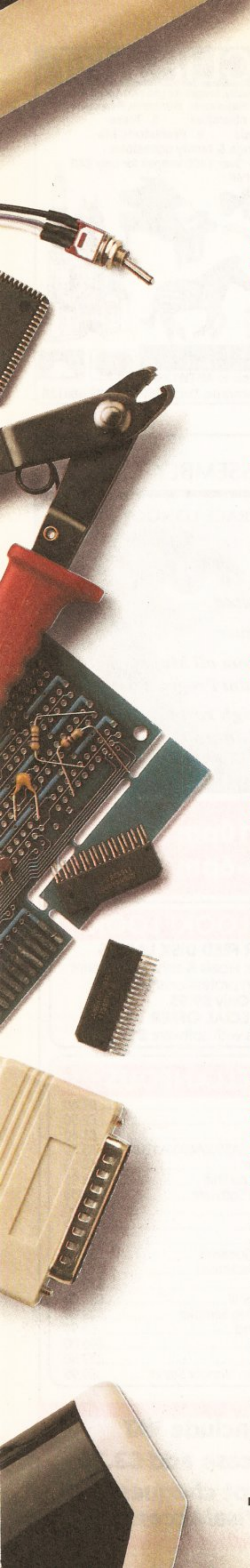
When I use *Pen Pal* 1.3.18, *PageSetter* 1.2 and *Excellence!* 1.14, my Amiga 500 makes the screen go completely black, or any other colour. I have checked the disk with *VirusX* 4.0 and there was no virus to be found, so what is the problem?

Peter Willesborough,
Kent

First, Peter, *VirusX* 4.0 is an ancient virus checker that ceased development almost two years ago. Consequently there are a few hundred viruses it knows nothing about. Contact a PD library and ask for some more up to date virus utilities.

The problem you are having with those three programs is extremely difficult to track down on the basis of what you say. "When I use so-and-so the screen goes black" is simply not a full enough description of the problem. Do you mean the program crashes before it even loads? Or does it load and then crash when you select something from menu? Where did you buy the programs from? Are you booting from Workbench or booting from the program disks? What other programs are you running in the background?

Basically, to sort out these kinds of problems we need as many details as you can supply. Never mind if something seems to be so trivial that it probably doesn't matter – the more you tell us, the more likely it is we will be able to help you. ***JW*** AS



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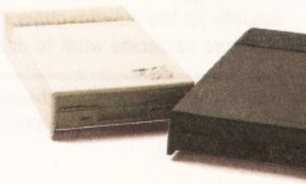
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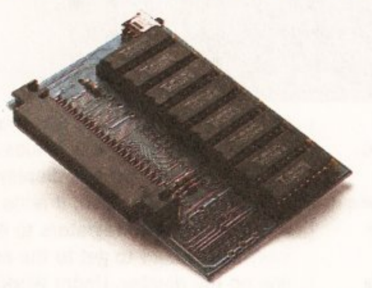
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Program: Copperbar **Language:** Assembly
Purpose: To show a 'copper' bar
Author: Mike Chapman, Bath, Avon

CODE CLINIC

This month's problem is a superb example of why you should work with the operating system and create legally-written program code rather than use the hardware direct.

The program tries to divide the screen into three separate sections, each of one different colour (Red, Green and Blue), draw some stripes on the screen, and then wait for a mouse click before continuing. The program worked fine until Mike upgraded from a 1.3 A500 with numerous goodies to a shining new A1200. Then things didn't go so well. The copper bars remained, but the stripes were all over the place. It was felt that this could not be a Chip RAM related problem, since he had had fast RAM on his A500.

The answer to this particular one is very easy indeed. Under Workbench 1.3, the Kickstart sets up a display which is pretty normal. It does not use any of the clever tricks that the Amiga is capable of. When you create a screen display by writing to the hardware registers, you have to write quite a few – and if you should ignore some, because they might be 'irrelevant', you could run into problems should Commodore decide to put something in them at a future date.

In this instance the fault was the **bpl1mod** and **bpl2mod** registers, which had not been set up. These are the bitplane module values. When the computer has displayed one line of your screen, it adds the contents of these registers to its internal pointers to get to the next line on the display. Under Workbench 1.3, these were always set to zero, since the Workbench screen just occupied a contiguous chunk of memory. Under Workbench 2.04, this changed with the introduction of overscan preferences, which meant that these modulo values could change. Under Workbench 3, it got even worse – the Workbench screen became interleaved, and the modulo values started to get very large indeed, and even negative values were used. Because Mike did not clear the modulo values, he "inherited" the values Workbench had left there, and got a corrupted screen accordingly.

Before I demonstrate the fix, I'll make a couple more observations about the program. It accesses hardware registers like this:

```
move.w #$1000,$dff100 ↵
; Set up a one bitplane ↵
lo-res display
```

It's very easy to mistype things like **$dff100**. The include files supplied with all commercial compilers and assemblers have a file called 'custom.i' which names all of these. They can be accessed using indirect addressing like this:

```
lea    _CUSTOM,a5 ↵
;(Where _CUSTOM = $dff000, ↵
the base of all registers)
move.w #$1200,bplcon0(a5) ↵
;Set up a one bitplane ↵
COLOUR lo-res display
```

You'll note that I've changed the value moved into **bplcon0** also, from **$1000** to **$1200**. **$1200** is the correct value, because it sets the composite video output to be colour.

The additional two lines that need to be added are as follows:

```
move.w #$0000,bpl1mod(a5)
move.w #$0000,bpl2mod(a5)↵
;Set odd and even modulo's ↵
to zero.
```

Good luck with your OS-friendly copper programs. In the meanwhile, for completeness, the fixed program called "stripes.s" is listed below (you'll also find it in the Code_Clinic directory inside the Source_Code directory of the cover disk). This will assemble directly with *DevPac 3* and was tested on an A4000, and an A3000 computer. It should work on all Amigas currently, but **be warned**: It's against Commodore's guidelines to access hardware registers directly.

Be **further warned**: this is a fixed working program. If you don't know what you are doing, please do not play with the hardware registers. These days, its possible to actually damage your computer by experimenting. AS

JARGON BUSTING • JARGON BUSTING

Copper – The copper is the custom graphics processor inside your Amiga that makes it so special. It's a computer all of its own, and has three instructions which can be used to generate some stunning visual effects. Basically, it can wait for any given position on the screen, and then perform some action. In this month's example, we are using the copper to show some stripes on the screen.

Hardware Register – A register is a special location in memory which is actually on the custom chips. The custom chips use values held in these registers to decide what to do.

SENDING US YOUR CODE

If you have a routine which needs to be debugged, or a programming problem or dilemma you can't solve, the Code Clinic may be able to solve it for you. You can either send your problems to Code Clinic, at the *Amiga Shopper* address, or E-Mail them directly on CIX to "toby". If you're sending things by post, please send a disk, and a note explaining where the fault could be. Simply receiving a 10,000-line program in 68000, uncommented and with a note saying "It doesn't work" qualifies it for the round filing cabinet on the floor. (The bin.) I look forward to debugging your code!

COPPERBAR LISTING: THE SOURCE CODE

```
            ttl       stripes
; Program: $VER: stripes 1.00 (Mar-93) by Mike Chapman. Updated by Toby Simpson.
            incdir    "inc:"
            include   "hardware/custom.i"
            include   "exec/funcdef.i"    ; (May not be needed)
            include   "exec/exec_lib.i"
_CUSTOM:    equ       $dff000
_EXECBASE:  equ       $04
SYS:        macro
            move.l    _EXECBASE,a6
            jsr       _LVO\1(a6)
            endm
            section   stripes_program,code_c
            lea       _CUSTOM,a5
; — Initialise our display ....
            lea       My_BitPlane,a0
            move.l    a0,d0
            lea       Copper_List,a1
            move.w    d0,6(a1)
            swap      d0
            move.w    d0,2(a1)              ; Pointer to bitplane.
            lea       Copper_List,a0
            move.l    a0,cop1lc(a5)
; — Set up display registers ....
            move.w    #$0000,copjmp1(a5)  ; Trigger copper list.
            move.w    #$1200,bplcon0(a5)  ; 1 bitplane, colour.
            move.w    #$0000,bplcon1(a5)  ; No fine scroll.
            move.w    #$0024,bplcon2(a5)  ; Sprites/Playfield priority
            move.w    #$0000,bpl1mod(a5)
            move.w    #$0000,bpl2mod(a5)  ; Clear modulos
            move.w    #$2c81,diwstrt(a5)
            move.w    #$f4c1,diwstop(a5)  ; 320 x 200 display
            move.w    #$0038,ddfstrt(a5)  ; Display Fetch start
            move.w    #$00d0,ddfstop(a5)  ; Display Fetch stop
; — Set up our bitplane memory then start display ....
            lea       My_BitPlane,a0
            move.w    #7999,d0
Write_Stripes:        move.b              #$02,(a0)+
            dbra      d0,Write_Stripes    ; Draw stripes.
; — Wait for a click ....
Wait_Click: btst      #$06,$bfe001
            bne.s     Wait_Click          ; Wait for mouse click.
            lea       GraName,a1          ; EXIT!!!
            moveq     #$00,d0
            SYS       OpenLibrary          ; graphics library
            move.l    d0,a1
            move.l    38(a1),cop1lc(a5)
            move.w    #$00,copjmp1(a5)    ; Boot-Start copper.
            SYS       CloseLibrary
            rts
;           section   misc_data,data
GraName:    dc.b      "graphics.library",0
            section   chip_data,data_c
My_BitPlane:          ds.b                8000        ; 1 320x200 bitplane.
; — Change the line $01820f0f to change the colour of the stripes
Copper_List:          dc.l                $00e00000,$00e20000
            dc.l      $01820f0f           ; palette for stripes (MAGENTA)
            dc.l      $600ffffe,$01800f00 ; RED
            dc.l      $a00ffffe,$018000f0 ; GREEN
            dc.l      $f00ffffe,$0180000f ; BLUE
            dc.l      $fffffffe
            end
```

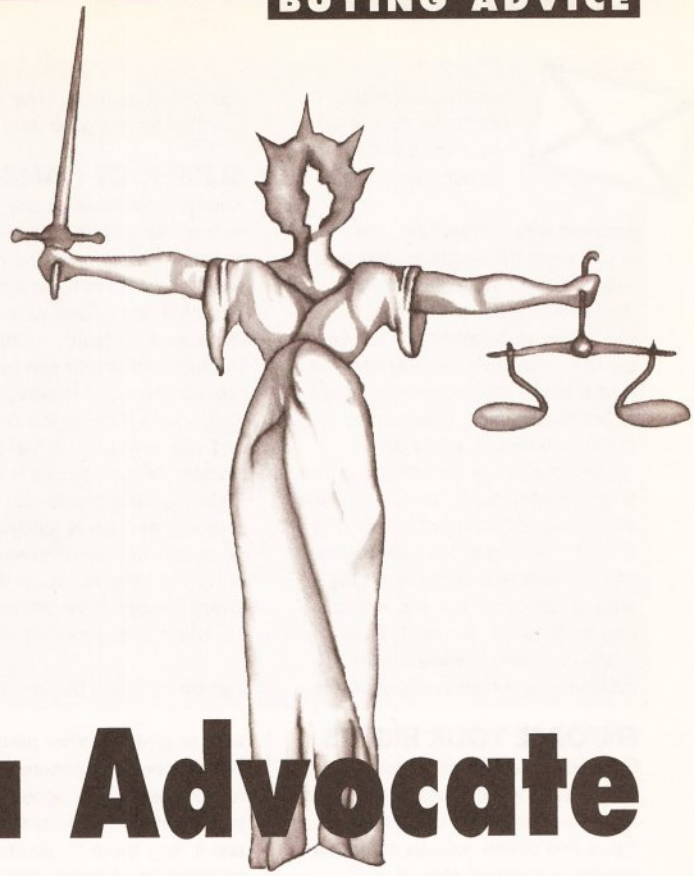
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Note that we can reply to your queries only in these pages – personal replies are impossible.

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Amiga Advocate

YOUR LETTERS ANSWERED

Let's look at just some of the letters we have received...

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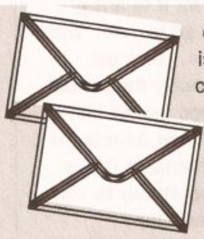
Richard W from Exeter writes that he ordered a software title from a mail order firm. The company advertised the software at £23.99, and he duly sent off his order with a cheque for the right amount. Eight weeks later he still hadn't received any response, so he contacted his bank to see if the cheque had been cashed. Sure enough, it had – three days after he sent it. Continuous attempts were made to contact the company by telephone, but Richard was met with a stream of excuses such as, "The boss isn't in, please ring back", or "We are waiting for deliveries from our suppliers", or simply no answer to his call. Finally, he managed to speak to the owner, who was less than polite and said that a credit note was in the post, which could be used to buy any other software title from them. What should he do?

Andrew: Given that the company has not honoured its part of the contract, by failing to supply the software specified within a reasonable time, Richard is entitled to a full refund of his money. Retailers often issue credit notes in an effort to retain the customer's money, but obviously in cases like this, that policy just isn't going to be good enough. Richard should write to the company by Recorded Delivery, giving it seven days to refund his payment. If the company won't co-operate, he should either consult the Trading Standards Office or ask at his local County Court about issuing a summons to recover his cash.

TOMORROW FOR SURE

Graham G from Leytonstone ordered a genlock from his local shop for use in his business. He told them he needed it within seven days for an extremely important job. The shop assured him that the goods would arrive within that period. The genlock arrived two days later but it was faulty. Graham rang the shop immediately to explain the problem, but was told that their supplier couldn't get another one to him for a fortnight. Graham couldn't obtain a genlock locally and lost an important contract worth £250 as a result. What should he do ?

Andrew: If a shop fails to deliver goods within an agreed time, the customer is entitled to cancel the contract and get back any money already handed over. It is less



certain whether he is entitled to compensation for the loss of earnings caused by not having the equipment needed to fulfil a customer's order – it depends what the shop actually said to him. Graham should consult his solicitor before taking further steps or get in touch with his local Citizen's Advice Bureau.

INCOMPLETE PACKAGE

Stan from Manchester bought a complete set-up from a mail order company – an Amiga, a monitor, hard drive, printer and second floppy drive. The package was bought on credit, and was intended as a Christmas present for Stan's daughter. The set-up was delivered promptly by the company, but when Stan unpacked it, the printer was missing. He contacted the mail order company, which was very sympathetic, but said that it had no further stocks of the printer, and that considering this was a package deal, including what was a discontinued model from the manufacturer, it would offer him a settlement of £25 in lieu. It is most unlikely that Stan would be able to

LAWS OF THE LAND

The last quarter of a century has seen a huge growth in the number of new Acts in the area of Consumer Law. The major additions have covered sale of goods, financial services, consumer protection and consumer credit.

If you find yourself involved in a dispute, it is important to establish whether the problem has arisen under Criminal or Civil Law.

Criminal Law is legislation which is written to cover 'Offences against the Public', and transgressors against these laws can expect to be prosecuted by the state on the people's behalf. Most Criminal Law which is relevant to the consumer is enforced either by Trading Standards Officers at your local Authority or, in serious cases, by the police. This covers crimes such as fraud, false or misleading advertising, and handling stolen goods.

Civil Law is about the rights and duties of parties in a transaction, and if there are disputes it offers solutions which must be instigated by the parties and not by an outside agency. The main law here is the Sale of Goods Act, which states that when you buy goods from a business, the goods must be "of merchantable quality", "fit for the purpose" for which they are intended or which you make known to the seller, and "as described" by the seller or in the seller's advertisement. If the goods fail any of these criteria, you are entitled to get your money back, and you can get help if you have trouble doing so.



buy a replacement printer for that amount of money. What should he do?

Andrew: Strictly speaking, Stan could reject the goods in total and insist on a refund of the amount paid so far. It doesn't matter that the printer is discontinued – if the package deal included a printer, he is entitled to the complete package or his money back. However, in practical terms, it would be reasonable to ask for either a refund on the printer, equivalent to its usual price, or a replacement printer of a similar standard to the one originally offered. This is a particularly grey area of consumer law and retailers may try to make the most of this. Stan could also investigate the insurance coverage provided by his credit card company if he is seeking a refund for the purchase.

SLEIGHT OF HAND?

Kathryn from Norwich bought a second-hand Amiga from an advert in her local newspaper. The person selling it demonstrated it and said that he'd had it for a year and that there were no faults on the machine. He then took it into another room to "collect the box." However, when Kathryn got it home it didn't work, and she went back to the seller. He accused her of abusing it and not understanding how to use computers properly. Kathryn is studying for a Computer Science degree at University. She suspects the seller swapped something while packing it up. Has she any recourse?

Andrew: It would be very difficult for Kathryn to prove that there was any fraud without any evidence over and above her word against the seller's. The Sale of Goods Act (see 'Laws of the Land', page 45) unfortunately does not apply to private sales, so, while the computer was clearly not fit for the purpose for which it was intended and it is also not of merchantable quality, Kathryn has no remedy under the Act for these shortfalls. However, the goods sold must still fit the descriptions given by the seller – in this case, that the computer works. Kathryn should immediately return to the seller and demand a refund. If she waits for more than three weeks, it could be inferred that she has accepted the goods and she may subsequently have difficulty in obtaining a refund. She should ask at her local Citizen's Advice Bureau if she needs help.

SMALL CLAIMS COURT

How much will it cost you to go to court? Since the abolition of the £1,000 limit for claims brought in the Small Claims Court (see 'No satisfaction' below), a new charging structure has come into play.

For claims up to £500, the court will charge £10, or 10% of the amount claimed – whichever figure is the greater. Claims of £501–£1,000 cost £60; claims of £1,001–£5,000 cost £65, and anything over £5,000 will cost £70.

This scale is designed not to abuse the claimant (you) when very high amounts are involved.

ENFORCE YOUR RIGHTS

Once you've established that there is just cause for a dispute, you'll need to find out how best to exercise your rights and obtain redress against a retailer or supplier who, in your opinion, has failed to fulfil his obligations to you as a customer.

IN THE BEGINNING...

If you have any problem, your first step should always be to try to sort things out with the company itself. Keep calm, and do not leap to the conclusion that the company is out to rip you off. If the problem is not solved straight away, it is always a good idea to put your complaint in writing. Send it by Recorded Delivery and keep a copy. In most cases it is wise to give the other party a deadline to meet, but ensure that it's reasonable. If your accelerator card is being imported from say, America, and it isn't there for you to pick up on Saturday morning, don't set a deadline of Monday for it to arrive. You must be able to go to court 'with clean hands' – that is, you must have behaved reasonably throughout.

No joy? Before you launch into court proceedings, report a trader to your local Trading Standards Office and give them an opportunity to sort out your problem. Don't take dramatic action unless it is really necessary. It is pointless suing a software retailer over a refund on a credit note if a simple telephone call could have done the job.

NO SATISFACTION...

You've spoken to the supplier, you've written to him and you've still had no satisfaction. Find out how big the company is. Are you in touch with the right person in the organisation? With smaller companies, go to the top and talk to the managing director. With larger ones, talk to the sales or marketing manager.

If all else fails it's time to turn to the law. Up until recently, the Small Claims Court could only deal with claims up to £1,000 in value, but now there is no limit. See the box above for details on charges. Visit your local County Court office (it will be listed in the Yellow Pages if you aren't sure where it's located) and ask for details of procedures. Decide whether you are claiming for a fixed amount or for a sum to be decided by the court.

Having established the kind of summons you wish to issue, you need to complete the appropriate form and pay the fee to the court office. (If you win, you can usually claim this fee back from the other party as well as the money you're entitled to.)

The court office will send the supplier a copy of the summons in the post and will have around three weeks to respond from the date he receives it. He can respond in one of four ways. In the best scenario, he will admit the sum due and pay it to you, together with the court fee. He could admit the sum due but plead poverty and make proposals to repay it by instalments. (If so, these must begin within 28 days.) He could offer you something less than your claim as a settlement – whether you accept is up to you. At worst, he'll deny that there is any money due and send his defence to the court.

If a defence is entered, the court will list the case for a brief hearing and decide the matter for you. The court will encourage you to reach a settlement at any stage up to the final decision, but if you can't come to an agreement the court will list the case for what is known as a Pre-Trial Review and consider brief arguments from both sides. If you don't attend the Review, you generally lose the case straight away. If you attend and the judge feels that the case warrants further investigation, he will set a timetable of steps to be carried out before a full hearing or arbitration and send you away. Alternatively, the judge may decide at that stage that the outcome is perfectly clear, and settle the case there and then.

One other way in which matters can be quickly settled is if the supplier fails to respond to the initial summons. This means that you have automatically won the case.

However, winning either by default or by judgment isn't necessarily a guarantee of getting your money back. We will look at this next time in Amiga Advocate. AS

BUYING WITH CONFIDENCE



- Before you send any money, ring the supplier to confirm that the goods you want are in stock, when delivery is likely to be made, and what the supplier's refund policy is.
- Check that the price you pay includes hidden extras, such as postage and packing and VAT.
- Beware of companies that do not include an address in their advert.
- Beware of companies that always have an answering machine instead of a person at the end of the phone.

BUYING BY POST

The Office of Fair Trading leaflet *Buying by Post* sets out some general guidelines for the mail order consumer. The advice includes the following important points:

- Never send cash by post, only cheque or postal order, or pay by plastic.
- Keep a copy of the advertisement, or, if this isn't possible, a note of the name and address of the advertiser, where and when the advert appeared, details of charges for postage and packing, and the stated delivery time.
- If you are writing with a complaint, include the following information:
  - Date of advert
  - Date of your order
  - Details of goods ordered
  - Name and address to which goods should be sent
  - Amount paid, and how it was paid (cheque, postal order, credit card)
  - Indicate whether you have a receipt
  - Give the trader's full name and address, and any reference number.

USEFUL CONTACTS

Check the telephone book for how to contact your local branch of:

1 Citizen's Advice Bureau
2 County Court or Small Claims Court
3 Trading Standards Office
4 Office of Fair Trading

Please note: If you are involved in a legal dispute of any kind, always seek independent advice. Amiga Advocate is intended only as a guide to the law in England and Wales – we cannot act as arbitrators in disputes between readers and companies, nor can we enter into personal correspondence.

Using Chaos to draw abstract patterns is interesting enough, but it can also be put to work to produce 'natural' images. Admittedly though, generating a picture from scratch is difficult.

The first step is to know the rules governing the growth of a plant and the features that make it look the way it does.

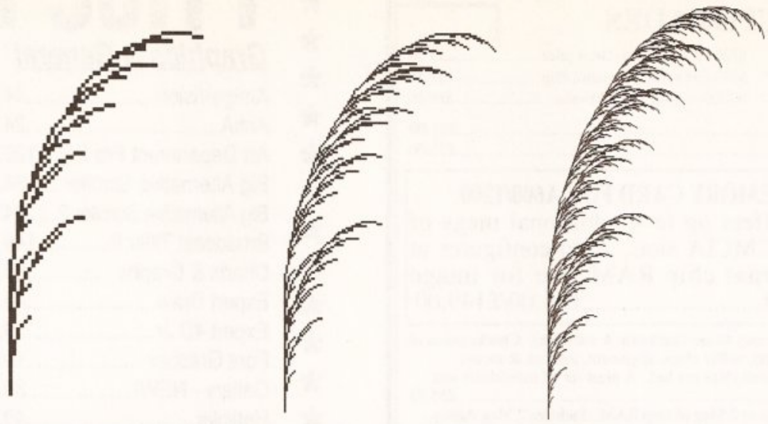
So far, we have been using Amiga BASIC in all the example programs. However, it is not ideal for producing fractal plants because it does not support recursion (the calling of a sub-routine from within itself), an essential part of the plant-drawing process. So, the examples here are given in GFA BASIC; they can be easily converted to AMOS, Hisoft BASIC, or C.

WHAT IS A PLANT?

To draw realistic-looking plants we need to discover how their characteristics can be re-created by the Amiga. Consider their structure:

- A single stem protrudes from the ground with many branches.
- Most branches split into several smaller sub-branches until the smallest branches are reached.
- Each plant has a large number of branch ends.
- The nature of the branching is consistent throughout the plant.

We have met some of the characteristics typifying plants earlier in the series, most notably in the branching of the Feigenbaum diagram. Plants can also be shown to be self-similar, just like the Mandelbrot set or Sierpinski triangle. For example, the tiny veins on the underside of a leaf give a good approximation of the structure of the parent tree because the nature of the branching is the same throughout the plant.



A fractal grass, produced by listing 2 (shown below right), grows larger but retains the same level of relative complexity

The exact set of rules (known as the 'algorithm') for drawing trees on the Amiga can be determined simply by observing the branching structure of real plants. Fractal plants, unlike most other fractals, can be created using a rule-based iterative process, rather than a mathematical one. This means that the process is easy to understand, but incorporating it into a program can be a challenge due to the reluctance of the Amiga to deal in anything other than numbers.

DESCRIBING A PLANT

The main branching algorithm is relatively simple, but first, we need to devise a method of describing the structure of a plant which GFA BASIC can deal with. Below is a simple picture of a grass; below right, it is split it up into segments of uniform length to make it easier for the computer to handle. By doing this the branch lengths are said to be 'quantised', with the smallest possible branch being one segment long, and the length of every branch being a multiple of one segment length. Angles are also quantised for convenience, in steps of 45 degrees. Curved branches can be built up by putting several angled segments together. For more detailed plants shorter segments and smaller angles should be used – but because longer descriptions are needed to store such plants the values given above will be used in this initial discussion.



A simple grass, branching in one direction

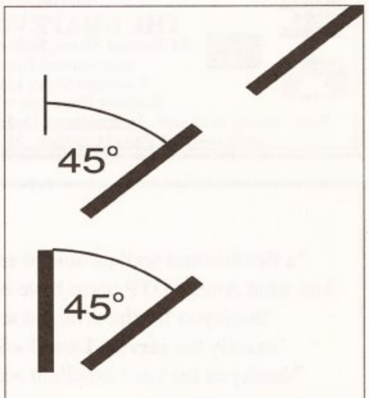
Now that the plant has been quantised it can be described using simple notation involving just three characters. So, for example, the grass in the second diagram is described using the following string: "1[1]1[11]"

Each branch segment is represented in the string by the character '1'. The square brackets are used to describe the tree's branches, where an open bracket ('[') represents a 45-degree clockwise split from the current position (this usually denotes the start of a branch) and a closed bracket (']') represents the end of a branch. Whole branches can easily be identified in such strings, as they are like miniature trees, with an equal number of open and closed brackets surrounding them. For example, the "[1]" in the above description represents the first 45-degree branch.

Branches can also be given sub-branches. So, the longer branch "[11]" could be changed to "[1[1]1]", meaning that it had a single segment branching off horizontally halfway along its length. The notation's versatility means that it is possible to describe any grass, no matter how complex it is.

DRAWING CONCLUSIONS

The method used to interpret plant description strings into drawing is rather crafty, and involves possibly



The same grass as it looks after being 'quantised' – now the Amiga can deal with it more easily

FURTHER

Up to this point, we've concentrated on drawing grasses because their branches split off in a single direction, making the initial theory simpler. However, now that the basic algorithm has been established it is fairly easy to alter it for the bi-directional type of branching found in trees. All that needs to be done is to add two new characters, the curly brackets ('{' and '}'), to the set recognised by the draw_branch plant visualisation procedure. The curly brackets are used to enclose descriptions of branches which split off in an anti-clockwise direction.

The relevant actions for each curly bracket are very similar to

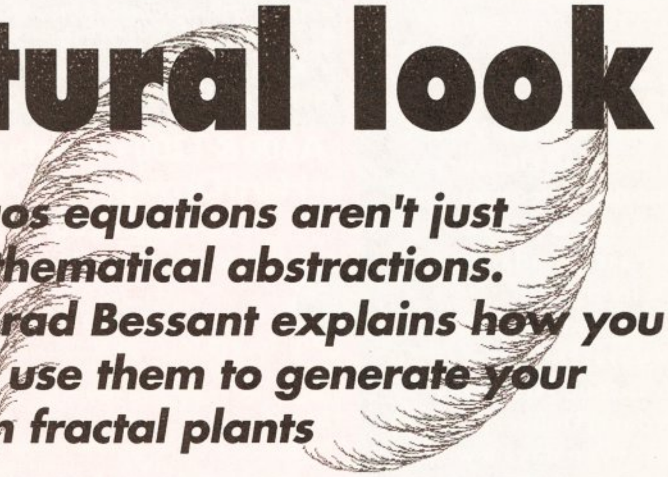
LISTING 1 • LISTING 1 • LISTING 1 • LISTING

```
COLOR 1
plant$="1[1]1[11]"              !Put sample string into plant$
unit_length=10                  !Set up constants for unit length...
unit_angle=45                   !...and unit angle
'
unit_angle=rad(unit_angle)      !Convert unit_angle to radians
'
GOSUB draw_plant                !Call procedure to draw the plant
'
PROCEDURE draw_plant
  angle_count=0                 !Initialise angle count
  pointer=0                     !Set up initial string pointer position
  GOSUB draw_branch(320,180)
RETURN
'
PROCEDURE draw_branch(x,y)
  INC pointer                     !Increment pointer position and..
  character$=MID$(plant$,pointer,1)!..note character in that pos'n
  '
  REPEAT
    SELECT character$
    CASE "1"            !If the character is a 1, draw a segment
      PLOT x,y
      x=x+SIN(angle_count)*unit_length*2
      y=y-COS(angle_count)*unit_length
      DRAW  TO x,y
      '
    CASE "["                      !If it's a [ then branch off
      angle_count=angle_count+unit_angle
      GOSUB draw_branch(x,y)
    ENDSELECT
    INC pointer                   !Note next character
    character$=MID$(plant$,pointer,1)
  UNTIL character$="]" OR character$=""
  '
  angle_count=angle_count-unit_angle !If it's a ] (end of branch)...
RETURN                            !decrease angle count and return
```

LISTING 2 • LISTING 2 • LISTING 2 • LISTING 2 • LISTING 2 • LISTING 2 • LISTING 2 • LISTING 2

```
COLOR 1
plant$="1"
one$="11[1[1[1]]]"
unit_length=2                      !Set up unit length...
unit_angle=11                      !...and unit angle
'
unit_angle=RAD(unit_angle)
'
REPEAT
  CLS
  GOSUB draw_plant                 !Draw plant so far
  GOSUB replace_chars              !Perform one iteration
UNTIL MOUSEK>0
'
PROCEDURE draw_plant
  angle_count=0                    !Initialise angle count
  pointer=0                        !Set up initial string pointer position
  GOSUB draw_branch(320,180)
RETURN
'
PROCEDURE draw_branch(x,y)
  INC pointer                      !Increment pointer position and...
  character$=MID$(plant$,pointer,1) !note character in that position
  '
  REPEAT
    SELECT character$
    CASE "1"                       !If the character is a 1, draw segment
      PLOT x,y
      x=x+SIN(angle_count)*unit_length*2
      y=y-COS(angle_count)*unit_length
      DRAW  TO x,y
      '
    CASE "["                       !If it's a [ then branch off
      angle_count=angle_count+unit_angle
      GOSUB draw_branch(x,y)
    ENDSELECT
    INC pointer                    !Note next character
    character$=MID$(plant$,pointer,1)
  UNTIL character$="]" OR character$=""
  '
  angle_count=angle_count-unit_angle !If it's a ] (end of branch) then
RETURN                             !decrease angle count and return
'
PROCEDURE replace_chars
  pointer=0                              !Set initial pointer position
  REPEAT
    INC pointer                    !Increment pointer position
    character$=MID$(plant$,pointer,1) !Extract character
    SELECT character$
    CASE "1"                       !If it's a 1 then replace it with one$
      newplant$=newplant$+one$
    DEFAULT
      newplant$=newplant$+character$ !Otherwise leave unchanged
    ENDSELECT
  UNTIL pointer=LEN(plant$)
  plant$=newplant$                 !Replace old plant$ with new one
  newplant$=""                     !Clear newplant$ just in case
RETURN
```

The natural look



Chaos equations aren't just mathematical abstractions. Conrad Bessant explains how you can use them to generate your own fractal plants

the most difficult technique in BASIC programming – recursion. Here's a ready to run procedure (called **draw_plant**) which will take any description string and plot the corresponding grass on the screen. The procedure, with some sample calling code, is shown in Listing 1. Listing 1 produces a simple grass. Its structure is determined by the following constants:

plant$ holds the string describing the grass.

unit_length is the segment length in pixels.

unit_angle determines the angle at which branches split off. In this example it is 45 degrees.

The two arguments passed in brackets to **draw_branch** determine the starting position for plotting.

It is easy to experiment with different grasses simply by altering the **plant$** assignment line at the start of the program. Note that any valid string may be used, but plants represented by particularly long strings may not fit on the screen. In this case you should reduce the **unit_length** and **unit_angle** constants as necessary. When trying to create a natural-looking plant, make sure that each open bracket has a matching closed bracket.

STRING GENERATION

However, the **draw_plant** procedure will not actually generate plant description strings. For a detailed piece of grass you have to type in a long string, which will not always produce a realistic result. The good news is that now that the necessary notational conventions have been established, the job is easier.

Like other fractals, plants are generated using a simple, structure-enriching, iterative process. The process used here is initially quite simple, but can be enhanced easily. Every iteration sees each segment being replaced by a larger, more complex branch. This is achieved by searching through the whole plant description (**plant$**), and replacing all the '1' characters with a more complex user-defined string.

Listing 2 uses a string generation process to produce a fractal grass. As well as the **draw_plant** and **draw_branch** procedures, a new one, **replace_chars**, generates the associated string. All the '1' characters are replaced by the contents of **one$**. This is initially set to "11[1[1[1]]]", although any valid plant-type structure may be used. The plant description which the program starts with (**plant$**) is the simplest possible structure, "1". Listing 2 produces a tiny piece of grass, which will then begin to grow. To stop the program hold down one of the mouse buttons. There are no limits imposed by the plant algorithms regarding the number of iterations performed – but complexity is limited because GFA BASIC can only cope with strings of less than 32,768 characters.

The list below shows some fun values for **unit_angle**, **unit_length**, and **one$** (all using a **plant$** value of "1"). Your values should have matching brackets, and try to plan ahead so that the tree gets larger as well as more complex. A replacement for "1" of "11[1]" will cause the replaced branch to get longer, whereas "1[1]" will just change it into two branches, each similar in length to the original.

one$	unit_length	unit_angle
1[11[[1]]]	3	15
[1]1[[1[[1]]1[[1]]]]	4	11
1[1[[1[1[[1]]]]]]	4	11

Both listings can be found on this month's coverdisk. Next month we'll look at fractal landscapes. AS

EXPERIMENTATION

those associated with the equivalent square brackets: an open bracket ('{') represents a 45-degree anticlockwise split from the current position (usually the start of a branch) and a closed bracket ('}') represents the end of a branch.

Incorporating these characters requires a little reworking of the **draw_branch** procedure – this is relatively easy since the program code used to check for and act on curly brackets is very similar to that for square brackets. Note that there is no need to edit the definition of **replace_chars** because brackets are not replaced under any circumstances. As well as creating trees, bi-directional branching allows us to create other line fractals, such as the Koch and C curves, which are also produced by repeatedly replacing segments with more complex structures.



A fractal tree can quite easily be created by adding bi-directional branching

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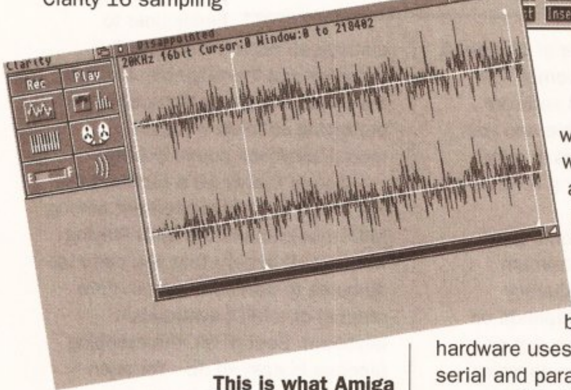
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Twice as nice

Clarity 16, the new 16-bit sound sampling package from Microdeal, has hit the streets. Paul Overaa checks it out...

The Amiga world has waited a long time for affordable 16-bit sampling and it has now arrived. Why all the fuss about 16-bit? It stems from the fact that 8-bit samplers can only provide waveform amplitude data values between 0 and 255 and this limits the relative amplitude resolution of the sampled sound to 1 in 256 parts. 16-bit samplers use a resolution range of 0 to 65,535 – the same as CD technology – meaning far more waveform detail.

So, in theory, Microdeal's new Clarity 16 sampling package should provide a dramatic improvement in sound quality. Has Clarity 16 succeeded in bringing this sort of quality to the Amiga at an affordable price? Here's your chance to find out...

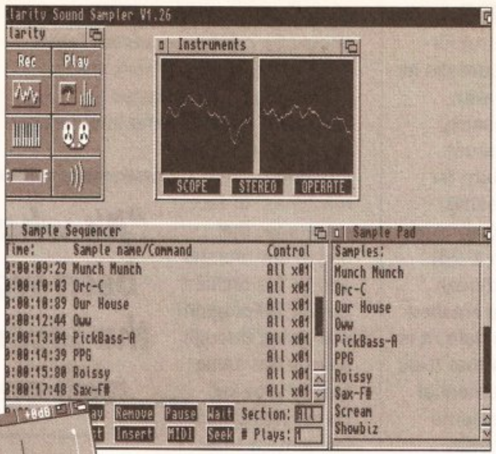


This is what Amiga musicians have all been waiting for: 16-bit sampling for the masses

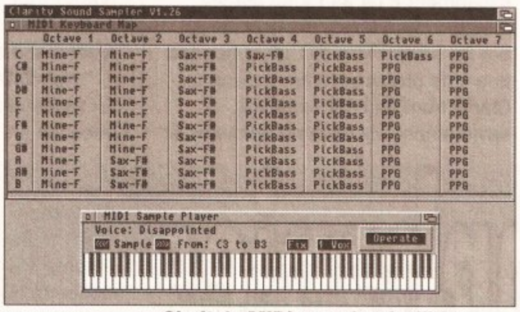
THE HARDWARE

This was developed by Audio Visual Research (AVR) and consists of a small plastic-cased unit measuring 4" (w) x 5"(l) x 1.5" (h) which has to be connected to both the parallel and the serial ports (the Amiga port connections are via two ribbon cables, each about 18" long). The stereo input and output connectors are phono socket type and are mounted on the unit's back panel, along with standard 5-pin DIN type MIDI-In and MIDI-Out connectors. No input signal level controls are provided, so levels have to be adjusted at source – as usual these will need careful monitoring to ensure optimum results. Internally the circuit board looks well made, although since the input and output connectors are mounted directly on to the board (common practice nowadays) it is obviously necessary to take care when connecting and disconnecting leads.

As luck would have it, my first Clarity hardware unit appeared not to work. After returning the unit to AVR, and subsequently being told that on their machines it seemed to be fine, I began to worry about my Amiga. (I was using an A2000 which, as far as MIDI and printer serial and parallel port use was concerned, seemed to be working fine.) It was suggested that because the Clarity 16 hardware uses virtually all of the serial and parallel port signal lines, it was possible that a serial or parallel port fault might prevent Clarity 16 from functioning, even though for less pin-intensive use both ports seemed OK. Sure enough, when I brought in a new machine the Clarity hardware burst into life and from that point on there were no problems at all! The main reason for mentioning this is just to convince the guys at AVR that I'm happy to admit this particular screw-up was down to my gear and not the Clarity 16 cartridge.



The Clarity sequencer has a lot of potential



Clarity's MIDI mapping facilities can effectively turn your synth into a sampling keyboard

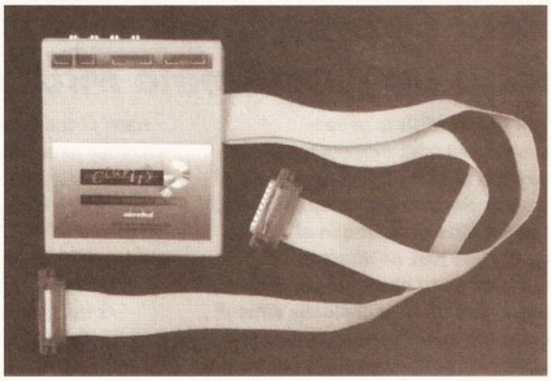
THE SOFTWARE

Two disks are provided, one containing the Clarity system software and the other various support and example files. Since the system disk is bootable setting up the system is easy – you just connect up the hardware, switch on, boot up, and double-click on the appropriate icons. The software is, incidentally, easily installed on hard disk.

Clarity's display is Workbench screen based and uses a window control scheme driven by a gadget panel containing eight buttons. As you might expect, you use the Record and Play buttons to record and play samples, but there are also buttons that provide access to the memory use details, a sample pad, the input level scopes, MIDI Playing, the Clarity sequencing facilities and real-time effects windows. From the user's viewpoint things work much as expected. To set the input signal level, for instance, you hit the Scope button and this causes a stereo VU meter 'instrument' window to appear. From here it is possible to switch between stereo and mono recording and between VU-meter, oscilloscope, and spectrum analyser style displays.

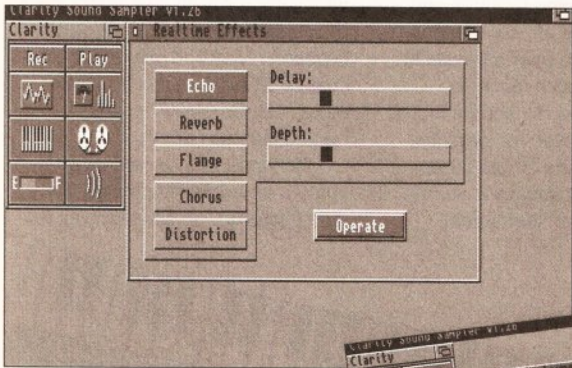
A project Menu enables you to create, load and save samples, MIDI maps and so on, and to dump and retrieve samples from external units (using either MIDI standard or Prophet 2000 formats). The Edit Menu provides the conventional range of cut/paste, overlay/mix and block edit operation options (including zoom-views). You can clear, reverse, swap/copy channels, perform panning and fade operations and so on, and there are a few extra goodies such as 3D Fast Fourier Transform display options. There is also a menu of special effects – echo, reverb, flanging, chorusing, and distortion effects are all easily produced. The editor does of course enable you to convert between mono and stereo samples, change 16-bit samples into 8-bit, adjust sample sizes, remap frequencies and so on.

On top of this comes an array of options for controlling things like auto-triggering, screen blanking (to improve record/playback performance), Amiga filter switching and file format selection. As mentioned a couple of issues ago,



16-bit sampling with Clarity 16 should give you dramatically better sound quality on your Amiga

Audio Visual Research does have its own AVR 16-bit sample storage format which is already in use with Replay 16 on the Atari ST. As you would expect, Clarity 16 offers AVR format support, but in addition to this, the Clarity 16 software also supports both the 8-bit IFF and the



You want real-time effects? With Clarity 16 you've got them!

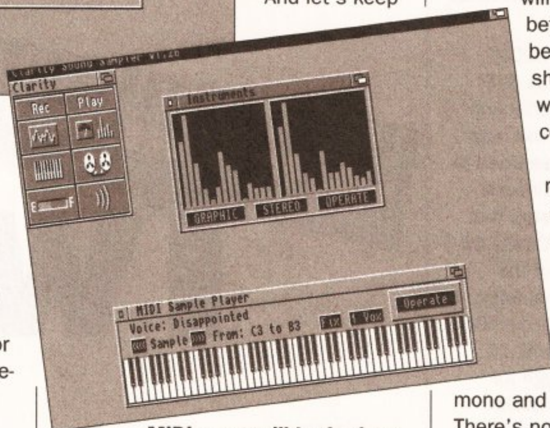
16-bit Audio IFF formats.

There are some useful MIDI facilities, which I'll talk about later, and other goodies including a Playback option, which enables you to direct the playback routines to either the internal Amiga channels or to the Clarity 16 cartridge, and a one-track sampled sound sequencer. A Fast Amiga option is also available which allows Clarity 16 to be fine-tuned to particular types of Amiga hardware (for example, accelerated machines). The updated current version of the software, incidentally, has not only removed several bugs (more about this below) but has also added a couple of extra facilities, namely freehand waveform editing and easier loop editing.

THE PACKAGE IN USE

My initial experiments were rather disappointing and the software did in fact crash regularly (always with processor exception 'addressing errors', ie 0000003 type Gurus). Things did however take a turn for the better when I received some updated software (version 1.26) and, although this has crashed once to date, it is obvious that fixes and substantial improvements have already been made.

And let's keep things in perspective. Let's face it – the sort of high-speed sampling that Clarity 16 performs is by no means easy to achieve, and it doubtless involves taking a few liberties with the Amiga's operating system. To be honest, a few problems in the early days are almost inevitable and I don't think that prospective users should be overly concerned. Newly released products almost always pass through such stages – especially as they come into general use on a variety of different machines. In fact I remember that only a few months ago Dr T's brilliant *SuperJAM* program was going through exactly the same type of growing pains. Remember incidentally that some magazine reviews of Clarity 16 will have been completed before updated software became available and you should bear this in mind when comparing reviewers' comments.



MIDI users will be far from disappointed with what's on offer

Now for some good news. The maximum sampling frequency obtainable depends on your machine, but on a standard Amiga we're talking about 44kHz mono and 32kHz stereo – that's CD quality in mono and near-CD quality in stereo. There's no doubt at all that in many respects Clarity 16 is what we've all been waiting for – the sound quality is nigh-on brilliant. As with all samplers, it is necessary to experiment a bit as far as setting suitable input levels is concerned, but for newcomers all that is needed is a little practice. Users moving to Clarity from an 8-bit sampling environment will have no problems at all – though the amount of memory required for 16-bit samples may come as a bit of a shock.

> ***"It's what we've all been waiting for – the sound quality is nigh-on brilliant"***

As for the sound quality, there is only praise. When, for example, I used Clarity to take 16-bit samples of my drum machine (which itself uses 16-bit sound samples) and played both back through my mixer, swapping between output sources, it proved absolutely impossible to distinguish between the Clarity samples and the originals. In short, the Clarity hardware is capable of producing absolutely superb record/playback sound quality.

One of Clarity 16's facilities that will cause a lot of excitement among MIDI musicians is the MIDI Playing window – it is here that you can map samples to particular areas (note ranges) of a MIDI synthesiser keyboard. Best of all, the mapping process is easy to do – for each selected voice (that is, sound sample), you just wipe the mouse over the chosen key range, and then hit the FIX button to store that part of the map. When you click on the Operate button your Amiga/Clarity set-up functions as a 16-bit programmable sampling keyboard with incoming MIDI notes being played with the voices you've set up in your MIDI Voice Map (which can be loaded and saved).

Non-MIDI users are also catered for (although to a lesser extent) because an 'F Key mode' enables

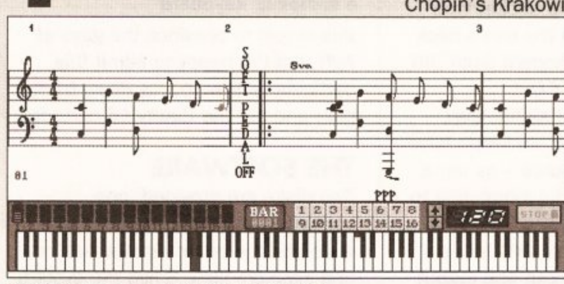
A sequence of symphonies

Paul Overaa finds an easy way to load up Eine Kleine MIDI Musik

The use of MIDI is usually associated with modern music but, despite the fact that some purists may throw their hands up in horror, the benefits of MIDI can of course be applied just as much to the classics as to chart songs. Creating large, and often technically difficult, classical score sequence sets is obviously not everybody's cup of tea but there is an alternative which can eliminate all of the hard work – namely buy the scores as MIDI Files from someone else.

There are a number of companies which specialise in classical score transcriptions but many of them, because they are directly aimed at professional users, are very expensive. The good news this month is that I've come across a classical MIDI File library that is good but – equally importantly these days – is reasonably priced.

At the moment the company, Words & Music, has seven disks of classical material available. The Classic Collection volume 1 includes Beethoven's symphony No 8 (all four movements), an extract from Beethoven's 5th symphony, Shostakovich's 5th symphony (the second movement), Mozart 40, Mozart's Rondo Alla Turca, Chopin's Fantasy Impromptu, Habanera, Anitra's Dance, Ave Maria and more. Volume 2 includes all three movements of the fifth Brandenburg Concerto, Gershwin's Rhapsody in Blue, Beethoven's Moonlight Sonata (all three movements), Eine Kleine Nachtmusik, Suite Antique by John Rutter, Widor's famous Organ Toccata, Air on a G String, Für Elise, Flight of the Bumblebee, plus others. Volume 3 offers Bach's Brandenburg Concerto No 2, all 16 movements of Mussorgsky's Pictures at an Exhibition, the Blue Danube Waltz, Chopin's Krakowiak Rondo (a live virtuoso performance lasting over 13 minutes), Debussy's Arabesque No 1, Trumpet Voluntary and other pieces.



MIDI Files can make the classics accessible to everyone

Volume 4 offers a range of pieces including extracts from Mozart's Kyrie Eleison and his Divertimento in F for string quartet, Mendelssohn's Opus 25 (an 18-minute masterpiece), and the Dance of the Sugar Plum Fairy (from Tchaikovsky's Nutcracker Suite). Volume 5 includes Erik Satie's three Gymnopedies, Debussy's Arabesque 2 and Danse, Spring from Vivaldi's Four Seasons, Beethoven's Opus 6 for piano duet,

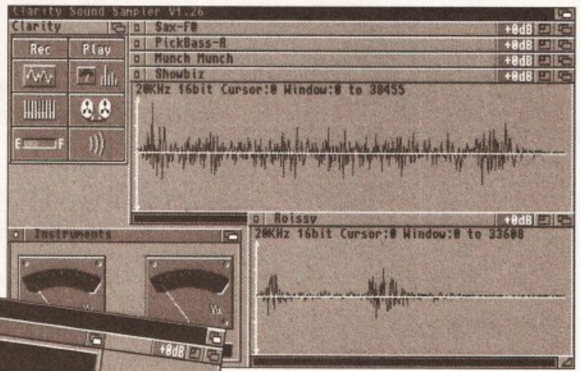
you to set up the Amiga function keys to trigger sample playing. Limited, but usable, pitch alteration is also available using the numeric keypad.

THE FINAL ANALYSIS

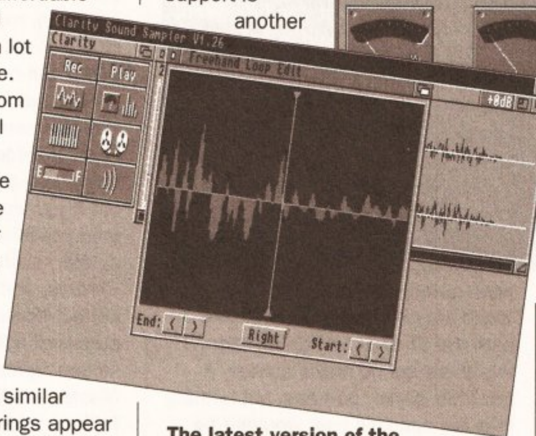
Despite a few early hiccups Clarity 16 clearly has a lot of potential and it is obvious that a lot of work has gone into its development. 8-bit resolution has always limited serious interest in Amiga sampling among musically-minded users but up until now the cost of higher resolution sampling has, to say the least, been prohibitive. Microdeal is the first company to produce an affordable 16-bit Amiga system and already there has been a lot of interest in the package.

Without detracting from Microdeal and AVR's well deserved glory it is of course difficult to imagine that other companies are not working along similar lines, and Commodore's own plans for future 16-bit sampled sound support do nothing to simplify the situation. Will the Amiga world see similar budget-priced 16-bit offerings appear during the coming months? That remains to be seen, but to be honest there is not much that is rumoured to be in the works.

The benefit of moving into the 16-bit scene is simple: you are going to get an almost unbelievable improvement in sample quality. Not everything however will be plain sailing. To start with you'll need at least 2Mb to do anything really useful with Clarity 16, and even then the system is not going to compete with products like the Sunrize boards which offer things like direct to hard-disk recording. I can however confirm that plans are already under way to provide Clarity with direct to disk recording facilities, but while this is obviously something to bear in mind for the long term I personally can't see it happening this year.



The Clarity 16 software is really at its best with 2Mb or more



The latest version of the software adds free-hand loop editing

The extent of external support is another consideration. Detailed accounts of the Amiga's integral 8-bit sampled sound system and the IFF sample format have been available in the official Amiga documentation right from the word go, so commercial programmers – and public domain tracker and utility writers – have found it easy to travel down the 8-bit sampled path. The proliferation of such software has directly contributed to the use of 8-bit sampled sounds.

For the same 'snowball effect' to happen with 16-bit sampling, the Amiga programming community needs to be given some practical encouragement to get into 16-bit sound sampling – in other words, the right technical info needs to be made readily available. Programmers can certainly get details of the Audio IFF standard from the Addison Wesley RKM manuals, and Audio Visual Research readily releases details of its AVR file format, but what about the Clarity hardware? Fortunately it certainly seems at the moment that routines and programming details are going to be made available to anyone who wants them. This should encourage software houses and public domain coders to take an interest in, and take advantage of, the Clarity 16 system.

Despite the above intangibles one clear fact emerges – Clarity 16 is a godsend to the many Amiga users who have been waiting for the chance to experiment with 16-bit quality samples. That alone is going to be enough to make an awful lot of musically-minded users (including myself) happily jump on the Clarity 16 bandwagon. AS

SHOPPING LIST

Clarity 16........................£149.95
Details from Microdeal on:
☎ 0726 68020

CHECKOUT CLARITY 16

Ease of Use ●●●●○
No major problems in this area now that the new current version of the Clarity 16 software has eliminated most, if not all, of the early bugs.

Features ●●●○○
Has all the makings of a good package, but a few more editing goodies wouldn't go amiss.

Price Value ●●●●○
At the moment Clarity 16 is the only cheap way to get into 16-bit sound sampling on the Amiga.

Overall rating ●●●●○
The sample quality is as good as expected, and of course the price is right. Since there is no competition at present, Clarity 16 is absolutely certain to do well.

---

ten pieces from Schumann's Opus 68 and a range of other pieces. Volume 6 provides another selection of goodies including Mozart's Piano Sonata in C major, Chopin's well-known Polonaise and a nice collection of virtuoso pieces for Spanish guitar. The seventh disk, called The Well Tempered Clavier, takes its name from the book containing the first set of Bach's Preludes and Fugues – all 48 pieces are provided.

The arrangements are not actually guaranteed to be note-perfect transcriptions in the strict sense, but the interpretations of the pieces I knew seemed surprisingly good, and I'm sure that most potential users will be more than pleased with the material on offer. With modern synthesisers being easily able to duplicate harpsichords, church organs, and all manner of orchestral sounds, it's easy to make pieces sound authentic. Equally, if you feel like taking liberties with voices or the arrangements provided then the MIDI sequencer does of course provide the ideal vehicle for creative experimenting.

The Words & Music library is not restricted to just the classics either. There is a Ragtime disk which contains about 20 Ragtime pieces (including of course The Entertainer), and a Christmas MIDI Song Collection disk with arrangements of over 100 festive tunes and carols. A Keep On Drummin' disk is also available and this contains about 160 drum patterns, a number including bass lines.

The patterns are configured to the General MIDI (GM) standard, which should ensure that you get the correct sounds in the correct parts on any GM-compatible instruments (and most likely on instruments adhering to GS, Roland's own version of GM, as discussed in *Amiga Shopper* issue 17). The patterns can be used directly with the Roland Sound Canvas modules (whose drums are based on the MT-32), Yamaha TG100, Korg 03R/W and so on, and any other unit that supports the GM/GS philosophy. The patterns can of course be edited or remapped for use with any other synth or expander, and an explanation of General MIDI and GM drum assignments is provided as part of the Keep On Drummin' package. The drum sequences themselves are MIDI File format 1 type files with each drum on a separate track, an arrangement that makes it very easy to edit the sequences.

SHOPPING LIST

Words & Music volumes £10.95
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Keep On Drummin'
Bach's Well Tempered Clavier
Disks are available in Amiga, Atari ST, PC and Acorn Archimedes formats
For details contact:
Words & Music
☎ 091 529 4788

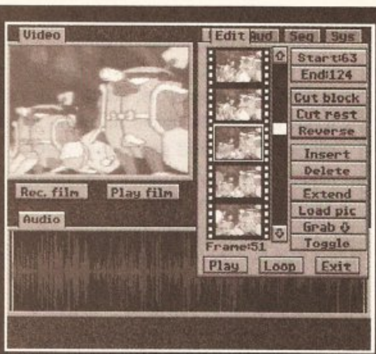
CHECKOUT WORDS AND MUSIC

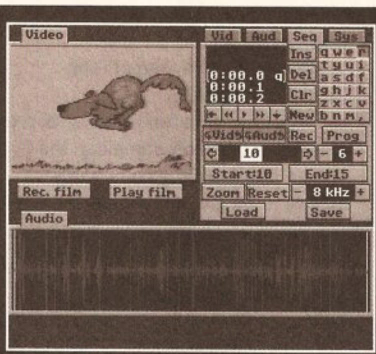
Ease of Use ●●●○○
Depending on your MIDI set-up you may, as with most MIDI file sequences, need to do a bit of editing or channel remapping.

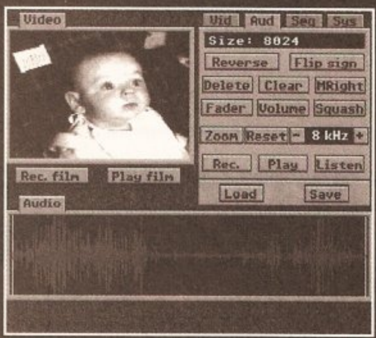
Features ●●●●○
The best 'feature' of this library is that someone else has done all of the hard work for you!

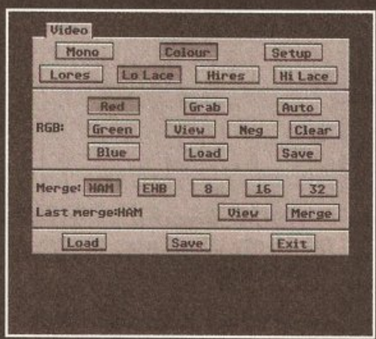
Price Value ●●●●○
You get a lot of music for your money.

Overall rating ●●●●○
There are some really nice pieces in this library and if you are one of the growing band of MIDI-based classics lovers then these disks are well worth checking out.









Left: Video Editor. A small filmstrip arrangement is the key to deleting unwanted sections of an .FLM or .VID sequence, adding new frames or making other changes in the picture order.
Right: Sequence Editor. By stringing together various film, video and single image files, longer and more sophisticated presentations can be composed. All choreography takes place in the sequence editor and the effect is enhanced if the clips have sound.
Below left: Audio Editor. Sound, like video, can be grabbed into Video Master at sampling rates of up to 16KHz. Then it can be edited, resampled or tweaked in several other ways.
Below right: Setup: For full screen grabbing, first define the type of screen you want to end up with before grabbing and merging the results into a colour image.

Despite having several years' worth of experience in the world of video, music and sound recording behind me, this is the first time I've ever used a digitiser which can freeze both sound and vision in one go – and for less than £70 at that. How? Enter Microdeal's *Video Master*.

Now, I know this all sounds too good to be true and sure enough, there is a catch. Well, in fact there are several – not least that the current design of *Video Master* means that it can only be used with Amiga 500 and 500 Plus models. This is no bad thing from a retail point of view, since there are still many thousands of Amiga 500s in the world; the drawback is for owners of other Amiga machines, who won't be able to make any use of *Video Master* until it is redesigned for their particular model.

Putting this small drawback aside, lets find out how *Video Master* may be of use to the average Amiga owner – at whom this product is surely targeted.

To be fair, *Video Master* shouldn't be regarded as anything approaching either professional or semi-pro kit. The hobbyist market is the most likely audience to be attracted to this one – people who dabble, experiment and enjoy new challenges, but don't wish to splash out on expensive kit until they are sure that they really need it. In this case, *Video Master* fits the bill admirably, allowing experimentation with both sound and video digitising for a relatively small outlay. So, let's look a little closer.

THE REAL NITTY GRITTY

The first step is to plug the wedge-shaped hardware into the Amiga 500/500 Plus's expansion port. Attach the audio and video feeds to their respective phono inputs, boot up the machine with the software disk and you're in business. And don't worry if you already have an A590 or other hard drive unit in place – with a simple adaptor, the Video Master can also be accommodated, though providing power for the complete set-up could put a strain on older-style power units. The software will run quite happily from a hard drive, too.



Use the VidiPlay software to project your finished Sequence, Film or Video files over a 16-colour backdrop of your choice

EEK! IT'S AN ST!

Don't get confused when you first see the user interface: your Amiga hasn't turned into an Atari ST, it just looks that way because the code has been ported across – a result of *Video Master* also being available for both the ST and the Falcon. Beyond this there are no major worries. A few little quirks, perhaps, but nothing that any sensible user wouldn't be able to cope with, particularly if they take the time to study *Video Master's* in-depth manual.

GRABBING STUFF

There is little sense in pretending that *Video Master* is the best thing since sliced bread when it comes to video digitising: it isn't. That said, there are plenty of good things which it can do, and do pretty well at that. For instance, one of its unique specialities is to capture video and sound simultaneously to produce chunks of animation. Granted, the video will only be 160 x 100 pixels in size, and in monochrome, but the ease and speed with which such a sequence can be captured is impressive. Even I was rather pleased when I played back the completed .FLM (short for FILM CLIP) file and experienced the joys of synchronous sound and vision.

Sequences can also be grabbed mute (without sound), in which case the result will be saved as a .VID file – this involves a degree of memory saving, important to those owners with only partially-expanded machines. There's also a speed setting which allows capture up to a maximum of 25 frames per second (on PAL system Amigas) and right down to time lapse, where the interval between frames can be set in hours, minutes and seconds, or be triggered by either joystick or keypad for wacky stop-motion effects. These time settings can also be used to adjust the playback speed of animation clips before they are saved. And just in case you have no other way of seeing what's going on (like a second monitor, for instance), the small display window doubles as a low-resolution viewing screen so you can immediately see where your video images are going.

STILL LIFE

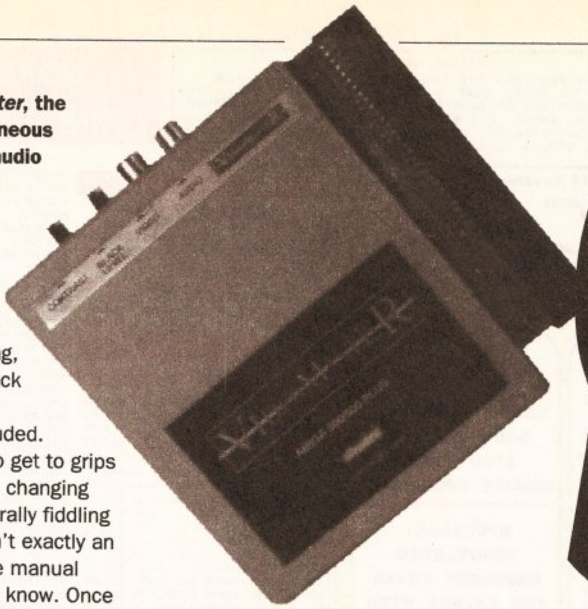
Moving from bite-sized images to something rather larger, *Video Master* can also capture stills in sizes up to 640 x 512 pixels, though there is no chance of doing overscan, meaning that the very edges of each frame will be lost. Grabs can be made in colour – which is fine if you have a black and white video camera and use the colour filters provided to split the image into red, green and blue components – but if you want to use colour video then you'll need an electronic colour splitter, such as Rombo's *Vidi Chrome*, and a video which has a perfect freeze-frame. I was quite surprised at the quality of "full screen" grabs provided by *Video Master*, all things considered. Brilliant it isn't, but it's certainly better than some of the pictures NASA used to transmit from the moon. There are limits though – once the RGB files have been grabbed and saved as IFF files that's it – it just isn't possible to make changes even after re-loading them back into the software. If you plan on manipulating the grabs further, you'll need some more appropriate software, as *Video Master* only provides one such feature – negative – so be warned.

CHOP AND CHANGE

An interesting feature of *Video Master*'s software is its ability to edit an .FLM or .VID file to delete or otherwise change the running order of the individual frames. Such matters are easily accomplished through the Video Edit screen, where a small filmstrip appears which can be chopped and changed in a manner akin to editing regular film. Individual 16-colour picture files can be grabbed in or added directly, entire blocks can be removed at will and defined blocks can be reversed. If you are really determined, a whole sequence of 16-colour pictures can be loaded one by one to make up an animated sequence.

Once your .ILBM, .VID or .FLM files have been digitised they can be assembled into presentations in the Sequence Editor. By assigning each file to an individual key it can either be played back manually or chained with others into longer runs by editing a new sequence together. If an .FLM file has sound this will also

STOP look & listen





Microdeal's *Video Master*, the first integrated simultaneous digitiser for video and audio

Whether you'd like to digitise sound or video, you can have the best of both worlds with Microdeal's budget-priced Video Master. Gary Whiteley samples the audio-visual experience

be played back with its associated video clip. Individual adjustments can be made to the playback speed of each clip and its overall timing, as well as to the playback frequency of any sound samples which are included.

It didn't take long to get to grips with editing sequences, changing things around and generally fiddling about. *Video Master* isn't exactly an intuitive system, but the manual explains all you need to know. Once a sequence has been set up it can be saved as a .SEQ file which can be changed at any time, new segments added and old ones adjusted or deleted altogether. Timing can even be set to an accuracy of one tenth of a second (though this facility is likely to be one of the most underused of those on offer in the timing department). The overall length of a sequence is entirely dependent upon the Amiga's available memory.

VIDIPLAY

If you're itching to share your new creations with friends there's no need to take all the hardware and

> **"As for audio sampling, it's just as easy as grabbing video"**

software with you, as a utility called VidiPlay is included. With it self-running disks can be constructed to play back VIDEO, FILM or SEQUENCES automatically and it will also work from hard drives or disk, so a simple click on a suitably-edited icon file will cause any presentation to spring into action. What's more, it is possible to do a few fancy tricks not available from within the standard software. For instance, a 16-colour background image can be loaded behind the actual sequence and it will remain there throughout, so perhaps a special background screen could be used to add variety.

It is also possible to determine exactly where on the display the sequence will appear – for instance centred, towards the top and so on, by setting x and y positions. Multiple copies of the sequence are also possible and stretching the sequence up to a larger size can also be achieved, though at the expense of resolution. The overall effect of this pint-sized sequence (remember, it has dimensions of only 160 x 100) on a different background can look rather good, under the right circumstances.

AUDIO

As for audio sampling, well, it's just as easy as grabbing video. With a suitable sound source (CD, tape or video) connected, there's little more to do than set the volume, cue up and record. Then, until the space bar is pressed, any audio that enters the digitiser will be sampled. The sampling rate is adjustable up to 16Khz, which admittedly isn't fantastic, but it helps keep memory usage down quite respectably.

Post-sampling editing can be done with the help of a few simple tools. Sections can be hacked out completely, reversed, faded or altered in volume. For closer attention to detail there is a zoom function, so that the zone markers can be more effectively set around an area of interest. There is also an option to "squash" a sample down – in other words, re-sample it at a lower rate. This saves space, but the sample becomes increasingly degraded, which may not be too pleasant in the long run.

One more interesting feature of the Audio editor is its ability to let you hear the sample as the markers are moved across it (a process known as "scrubbing"). This feature makes the location of specific sounds considerably easier.

Finally, if you want to use another audio digitiser instead of *Video Master's* you can, as the software can be configured to accept Amas, Stereo Master or Mastersound inputs. AS

HOW MUCH MEMORY?

To digitise one second of combined audio (at the full sampling frequency of 16KHz) and video at 25 frames per second, *Video Master* requires around 216K of memory. A quick calculation for your machine (minus around 100K for the software itself) will give you a rough idea of what you can do with whatever memory you have installed. Of course, using a lower sampling rate for either pictures or sounds will extend the memory resources somewhat, albeit at the slight expense of quality.

Video Master is a memory hog which grabs all available free memory, but there is no problem multi-tasking providing that the other programs are run before *Video Master*.

SHOPPING LIST

Video Master...................... £69.95
by Microdeal, PO Box 68,
St Austell, Cornwall
PL25 4YB
☎ 0726 68020

CHECKOUT VIDEO MASTER

Documentation ●●●●○
Very thorough and easy to understand, with good tutorials

Speed ●●●●○
Fast grabbing and fast playback

Ease of use ●●●●○
Generally quite easy to get to grips with

Quality ●●●○○
For this kind of money you shouldn't expect wonders

Flexibility ●●●●●
Integrated sound and vision – what more could you want?

Price ●●●●●
Speaks for itself

Overall rating ●●●●○

With sound, vision and flexible software there's a lot to be said for *Video Master's* integrated approach. Quality-wise it's certainly not a hot cookie but for great fun and education there's plenty to recommend it. A few 'undo' buttons would have helped, and a friendly warning that there are no audio or video inputs would be better than the current lock-out.

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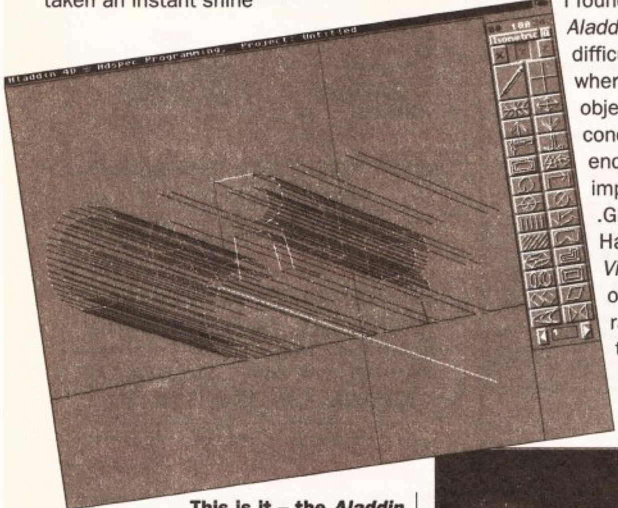
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If, like me, you've been following Amiga 3D graphics over the years, you'll probably remember a program called *Draw 4D*. Now it has a successor – *Aladdin 4D* – a massive overhaul on the original. From the advertisements in magazines, it appears that *Aladdin 4D* can go the distance against the likes of Impulses' *Imagine*, Activa's *Real 3D*, Octree's *Caligari* and NewTek's Video Toaster-linked *Lightwave*. Adspec claims that *Aladdin 4D* is the most advanced, flexible and intuitive 3D rendering and animation software for the Amiga. My mission is to find out if this is true.

I've tested lots of different 3D packages. There are some that I've taken an instant shine



This is it – the *Aladdin 4D* modelling interface. I found it confusing and hard to operate. The object on display was actually modelled with *Imagine*, converted with *Pixel 3D 2* into.GEO format and then loaded into *Aladdin*

to and others that I've tried my best to use but finally had to call a truce with, either because they didn't do what I required or because I couldn't get on with the way they operated. My criteria for what makes a program worth having are quite simple. A good program is one which provides the power and facilities that I require with the minimum of effort, though if I have to put in the necessary learning time to reap the benefits then so be it.

With this in mind, I settled down with the *Aladdin 4D* manual to begin the long, lonely journey into yet another 3D world.

SPOT THE DIFFERENCE

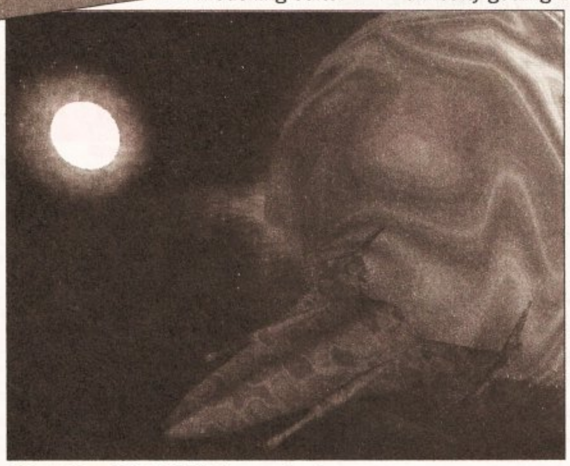
Two things struck me immediately. First, the manual doesn't have page numbers, but letter codings which I found rather obstructive. Second, the software doesn't have the familiar 3D tri-view interface which is the mainstay of so many 3D programs. I felt I was in an alien world, lost and without familiar landmarks.

Nevertheless, I plunged into the first tutorial – which involves setting up the display mode, loading the only example object supplied (a cube) and doing some simple animation with it. This is where my adventures really started.

But first, some explanations. *Aladdin 4D* is rather novel in the way that it operates. Not because it uses separate displays for modelling, rendering and animating, but because it has a unique logic and system.

> **"Aladdin 4D is equipped with some innovative ideas"**

I found modelling with *Aladdin 4D* particularly difficult, especially where non-primitive objects were concerned, and in the end I opted for importing objects as .GEO files (Allen Hasting's original *VideoScape 3D* object file format) rather than trying to use the non-intuitive, non-3D-feel modelling editor



This 640 x 512 24-bit image took around two hours for *Aladdin 4D* to render on a 40MHz '030 Amiga 2000. In its construction I used *Deluxe Paint 3* and *ImageMaster* to make the starry background; the spacecraft is a *Lightwave* object converted to VideoScape (.geo) format using *Pixel3D 2* and the gas disk was made with *Deluxe Paint 3* and *Pixel3D 2*. The planetary spheres and gas clouds were produced with *Aladdin 4D*

to build them. This wasn't because construction tools are absent – they aren't – but simply because I couldn't tolerate their clumsy operation. There's a freehand tool for building objects polygon by polygon and there are gadgets for adding arcs and rectangles. Any object can be spun, extruded, slanted, deformed or otherwise affected. It's just the building of them that I found too tricky.

To be fair, *Aladdin 4D* is equipped with some innovative ideas in the modelling department – including being able to set individual radii for segmented disk-type objects and a good range of point-and-click tools. But the lack of solid, or even hidden-line wireframe views, and the constant need to swap between the three axial views to examine different parts of an object eventually left me exasperated. I finally called it a day when I couldn't even work out how to construct a simple disk with a hole in the centre.

Fortunately, *Aladdin 4D* offers other ways to model objects – like converting EPS (Encapsulated Postscript) files such as those produced by Gold Disk's *Professional Draw 3*, loading objects created by *Draw4D/Draw4D Pro* and also using Natural Graphic's *Scenery Animator* DEM (Digital Elevation Mapping) files. But these are still no substitute for a reasonable modeller and I had difficulty getting EPS files to look the way I would have expected them to.

A far more satisfying feature of *Aladdin 4D* is its texturing prowess. A wide range of procedural (cf. algorithmic) textures is available, together with lucid instructions on how to get to grips with them and apply them. It is possible to have bump, reflection, opacity, hardness, illumination and genlock mapping types and also to determine colours, styles, orientation, and quite a few other settings as well – even to the point of being able to change one texture into another over time. Of course, ordinary bitmap images can also be used as textures and they can be layered together.

THE GAS MAN COMETH

But perhaps *Aladdin 4D*'s best texture feature is Gases – which are actually objects in their own right that can be used to enclose others and still let them be visible because they can be made transparent. Like textures, gases can be widely manipulated through the many available controls to produce some very spectacular effects. Turbidity, density, second colour and blend direction are just some of the many settings which can affect how gas looks and behaves.

The last of the 'textures' is Waves, which makes waves on the surfaces of objects. Like many other aspects of *Aladdin 4D's* features, waves can be animated in time and space, as linear, radial or bumpy waves, and modified by an extensive set of parameters. And they're also pretty easy to get to grips with.

Turning to animation, *Aladdin 4D* incorporates one of the easiest animation path methods I have come across. To move an object, light or even camera around requires little more than making a new multi-sided polygon to represent the path, converting it and then assigning the desired objects to it. Loops, path alignment, rotations and other functions are all simply controlled and a fast wireframe preview can show exactly what the action will be when fully rendered. One unusual aspect of this path method is that by changing the number of frames in the animation the object will be automatically tracked to the path in the new timing.

> **"Loops, path alignment and rotations are all simply controlled"**

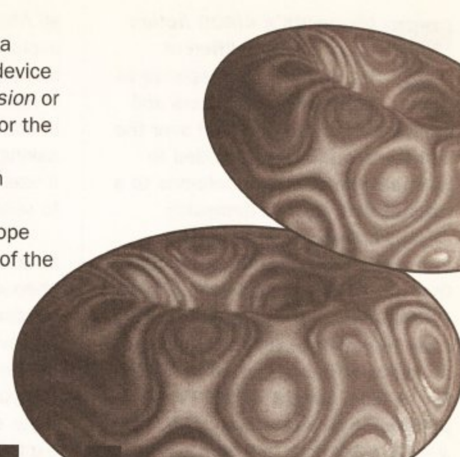
But once again I was soon in trouble. Because of the see-through nature of the wireframe preview it becomes difficult to know whether objects are passing by each other or through each other – which, in turn, hinders animation construction. I

WEAKNESSES

- Weak documentation – and confusing tutorials.
- Poor modelling interface.
- No demo examples, only images.
- Non-standard, non-intuitive, and sometimes downright awkward user interface.
- Lots of dumb spelling mistakes in the manual (which doesn't inspire much confidence).

It could be magic

Aladdin 4D is a new modelling and animation program fresh from the USA. Gary Whiteley rubs the lamp to see whether it has a genie in it

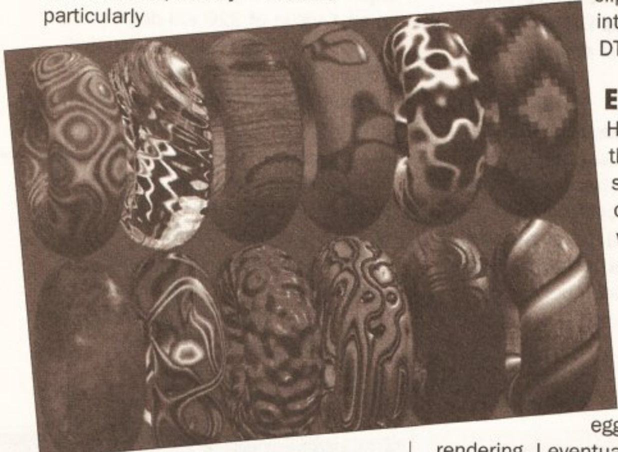


STRENGTHS

- Ease of making animation paths and moving objects along them.
- Fast wireframe rendering for previews.
- Impressive gas, wave and texture effects.
- Support for *DCTV, DMI Resolver, Firecracker* and *Opalvision* as well as standard IFF and 24-bit files.
- Flexibility – though obscured by interface and documentation.

suppose that being able to select which plane you view the action from helps, but not that much.

Aladdin 4D can produce "normal" ANIM OP5 animations for loading into programs like *View* or *Deluxe Paint* for replay, though *Aladdin* cannot replay the files directly. Another option is to save each frame of an animation separately – which is particularly important for 24-bit work – so that they can be composited together as required.



This is one of Adspec's demo images to show off *Aladdin's* nice looking textures

RENDER TIME

Having constructed a scene, the aim is then to turn it into something that the average human can see. To this end *Aladdin 4D* supports all the normal IFF still image formats, including HAM and 24-bit (but not yet AA modes such as HAM8) and is also able to output directly to several third party display devices – including *OpalVision*, *DCTV* and two NTSC devices – the *DMI Resolver* and Impulses' *Firecracker*. Note that for full-screen hi-res interlace rendering to *OpalVision*, 2MB of Chip RAM is required, though images can be saved as standard 24-bit files for subsequent display.

> **"The rendering screen isn't documented as well as it could be"**

SEEING IS BELIEVING

In order to see certain properties in a scene, the relevant permissions have to be toggled on in the **Render Options** requester. For instance, if there is transparency in an object it won't be rendered unless **Transparency** is turned on. Fortunately these settings are saved when the scene file is saved.

Rendering, like editing, takes place on a dedicated screen and, in common with other areas of *Aladdin*, there are plenty of parameters to fiddle with. One of the most complex is the ability to apply convolutions to a rendering image – resulting in blurring, sharpening or other image processing effects. It is also possible to adjust the amount of dithering applied during a render, something which can be important when using a limited number of colours. Both fog and fade effects can be applied over time and, if you choose, scenes can be saved as *Pro Draw* graphics clips for importing into suitable DTP programs.

EXPLAIN!

Having said that, the rendering screen isn't documented as well as it could be and I constantly came unstuck when trying to set the **Aspect Ratio** to stop spheres looking egg-shaped when rendering. I eventually worked it out (by using **Fixed** instead of **Relative**) but yet again, with absolutely no thanks to the manual.

Rendering itself can be a bit of a hit and miss affair. To see what's happening during a hi-res interlace 24-bit save, you are limited to only 16 actual display colours (with dither) so only when the render is finished and fully displayed in 24-bit will you know if it is acceptable. Of course, it is possible to make smaller size renders for quick previews, which can save a good deal of time. I really wasn't very impressed with *Aladdin's* HAM and other IFF renders – although admittedly I may be a little spoiled by having a 24-bit card.

The bottom line when it comes to rendering with *Aladdin* is that for the best results, particularly when rendering gases and textures, a better-than-normal-IFF display device is required, be it *DCTV, OpalVision* or whatever. Or a HAM8 version for the AA machines.

Although there hasn't been sufficient space to cover every feature of *Aladdin 4D* here, I hope I've given you some indication of the trials and tribulations I had trying to get to grips with the unfulfilled potential of this new pretender to the 3D crown. My advice to Adspec is this: improve the interface, improve the manual, iron out the creases and *Aladdin 4D* will be getting there. My advice to *you* is, until these changes have been made, tread carefully. AS

Gary Whiteley can be contacted by e-mail as: drgaz@cix.compulink.co.uk

Requirements: Any Amiga with *AmigaDOS* 1.3 or greater, 2MB of memory (10MB recommended!) and at least one 3.5" disk drive. Hard drive and 68030/68882 card recommended.

SHOPPING LIST

Aladdin 4D........................ £259.99
by Adspec Programming,
From: Micro-PACE UK Ltd, Unit 10, Perth Trading Estate, Perth Avenue, Slough, SL4 9XX, BERKS
☎ 0753 551888

CHECKOUT ALADDIN 4D

Documentation ●●●○○
General lack of intelligible explanation and page numbering. Too often learners are left to work things out for themselves

Speed ●●●●○
Adequate, though not a record breaker

Ease of use ●●●○○
Lacks many of the refined touches needed for truly user-friendly software

Quality ●●●●○
Capable of turning out some brilliant images – especially in 24-bit

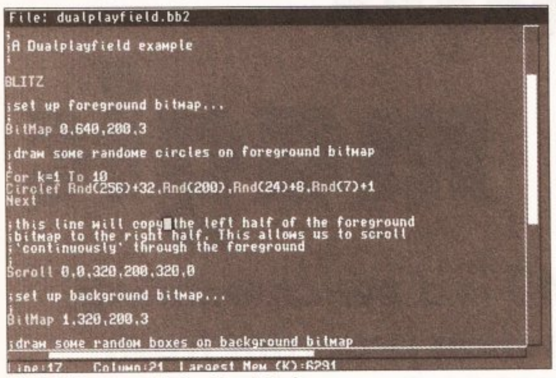
Flexibility ●●●○○
Potentially one of the most flexible 3D programs around but sadly let down by one of the least friendly interfaces

Price ●●●○○
In my opinion, *Aladdin 4D* does not currently offer good value for money

Overall rating ●●●○○

Aladdin 4D has a great deal of promise but is consistently let down by poor requesters, a difficult front-end, hard-to-use modelling functions, a poorly thought out manual and confusing tutorials. But it is capable of producing some stunning gaseous and texture effects and it is also good at making animation paths. This could be a great program – if it was easier to use! I think a new genie is called for.

This month's *AMOS Action* has a slightly different flavour to it. In response to the barrage of letters and requests that I've received over the last few months, I've decided to dedicate the next two columns to a tutorial that aims to demystify *Amos Professional's* powerful 'Interface' language. Now I realise that not all of you may own *AMOS Professional*, but it appears that most of you have taken the plunge and have either upgraded to *AMOS Pro* or have bought *AMOS Pro* in preference to either *Easy AMOS* or *AMOS 1.34*, both of which are still being sold. If you haven't upgraded yet, it could be well worth considering making the break.



AMOS' monopoly is all set to be challenged with the release of Blitz Basic

I have to admit that up until quite recently, I hadn't really experimented in great depth with Interface, due mainly to the fact that I devote so much time to other programs. I did have a quick look at it when *AMOS Pro* was first released, but I soon gave up after a long and fruitless fight through the manual. As I'm sure all *AMOS Pro* users will agree, the explanation provided by the Interface manual makes it look anything but simple. However, with a postbag becoming increasingly full of letters asking for Interface help, I knew that it was high time to turn my attention to solving some of your problems.

When you are starting out with Interface for the first time, the chances are that you will find it quite frustrating. However, you'll also discover that after a while, it all seems to fall neatly into place. Programming Interface is actually quite simple – it's just the manual explanation that makes it look so complicated. The idea of this tutorial is to take the strain out of the learning process for you and to enable you to get down to some serious programming in Interface almost instantly. Look through this first installment, try the examples, and I think you'll come to the conclusion that Interface isn't really the monster we thought it was.

AMOS UNDER THREAT

AMOS' monopoly could be under threat with the news that Acid Software, the New Zealand-based Amiga developer, is all set to storm the UK market with a new release of its popular *AMOS* challenger, *Blitz Basic*. Although the original has been available over here in limited quantities for about two years now, it never quite achieved the recognition that it deserves. Like *AMOS*, *Blitz Basic* provides the programmer with comprehensive access to the Amiga's sound and video hardware, allowing high speed scrolling, blitter objects and sampled sounds to be easily accessed using a language similar to BASIC.

Acid Software has been holding back on the release of its *AMOS* challenger in order to ensure that its product can compete with the latest release of *AMOS*, *AMOS Professional*. Many of the new features even leave *AMOS* for dead – for starters, *Blitz BASIC* isn't just restricted to hardware-based programming. Using a clever BLITZ/AMIGA directive, the language

AMOS ANSWERS

No AMOS bug is safe with Jason Holborn's trouble-shooting guide to better programming

DROLL SCROLL

I've been working on a multi-directional scrolling platform game for a few weeks now and I've come up against a couple problems which are causing me grief. Firstly, when scrolling a large bitmap, how do you stop the screen from dropping down one pixel?

Secondly, how do I go about detecting collisions between the main character and the various platforms that will be scattered around my game screen? I've tried using the *AMOS* Map Editor, but it's just too slow to be of any great use. Please help.

Paul Stone
Rhondda, Mid-Glamorgan

The problem that you've discussed doesn't usually happen unless you're swapping a large bitmap around to produce a sort of continuous scroll effect. This usually happens when the screen scroll reaches either the extreme left or right hand side of the screen. Say, for example, you were scrolling a 640 by 256 bitmap through a low resolution viewport. If the screen offset drops to below 0 or above 320 (don't forget that the screen offset command takes its origin from the top left hand corner, so an X value of 320 will display the second half of the bitmap), causing the pixel drop effect that you've mentioned. I would check that your scroll routine isn't producing the

AMOS CODE CLINIC

Still can't get the routine that you've been working on for two weeks to make sense? Let Jason Holborn write it for you...

START COUNTING

I have been using *Easy AMOS* for about one month now and I have managed to write a maths game for my young daughter. It is a very simple game that merely generates two random numbers and then my daughter has to type in the answer. My problem is this. I'd like to include some form of timer that counts down from say 10. If my daughter does not type in an answer by then, she runs out of time. I have tried many different ways of achieving this, but to no avail. Please help.

Mr M H Canvin
Deanshanger, Milton Keynes

The problem you've outlined, Mr Canvin, is a common one. In fact, I received at least four letters this month on the very same subject. Anyway, the solution is actually quite simple, so I can give you the source code you need to help keep your daughter on her toes. Here's an *AMOS* procedure that will do the job. Instructions on what parameters do what are contained within the source code – all you have to do is to call the _GETINPUT procedure instead of using the *AMOS* Basic 'Input' command.

Games programmers may also find this routine useful as it allows you to get a string of characters (in this case, a number) from the user without stopping program flow. You could also use this routine as the basis for a more elaborate high score table complete with bouncing bobs, *AMOS* 3D objects et al. The great thing about this little procedure is its adaptability. As you can see from the wide range of parameters that can be fed to the routine, it gives you extensive control over the positioning of both the timer and the input string. If you feel confident enough to play around with scancodes, you could even modify the routine so that only certain characters can be entered by the user – just numbers, for example. Here's the code.

LISTING • LISTING •

```
' ** GetInput Procedure
' ** Written by Jason Holborn

_GETINPUT[1,1,10,0,3,-1]
ANSWER$=Param$
Locate 1,5
Print "The answer you typed
was";Val(ANSWER$)
End


' ** _GETINPUT Procedure
' **
' ** X = X coord of number to
be entered
' ** Y = Y coord of number to
be entered
' ** TIME = Max number of
seconds allowed
' ** X2 = X coord of
countdown display
' ** Y2 = Y coord of
countdown display
```

values shown above. In answer to your second question, I have to admit that I've never attempted to write a platform game, but the theory seems simple enough. The easiest way to check for collisions between the player's sprite and the platforms would be to paste down the platforms as blitter objects and then use the standard *AMOS* collision routines to keep track of events. This would also make platforms more memory efficient as each screen doesn't have to be stored as a bitmap. Hope this helps.

LASER DAZER

1. I am having problems with the Europress Laser Routine published in the September issue of *Amiga Shopper*. When I run it, an error message is produced that informs me that there is a 'Do Without Loop' error. Having checked through the code though, the 'Do' statement is definitely there! What's going on?

2. I've just started using *Easy AMOS*. When I save programs to disk and then try to load them back in again, the file requester does not display them unless I save them with a '*.amos*' extension. Can you explain what I'm doing wrong?

3. When I use 'Easy Disc' to show the programs that I've saved to disk, some programs have '.bak' after them. Why is this?

4. Returning to the September issue of *Amiga Shopper*, I cannot get the Animated Bobs listing to work. Every time I try to run it, *AMOS* informs me that I do not have a file called 'Source:Ball.abk'. Do I need to buy this?

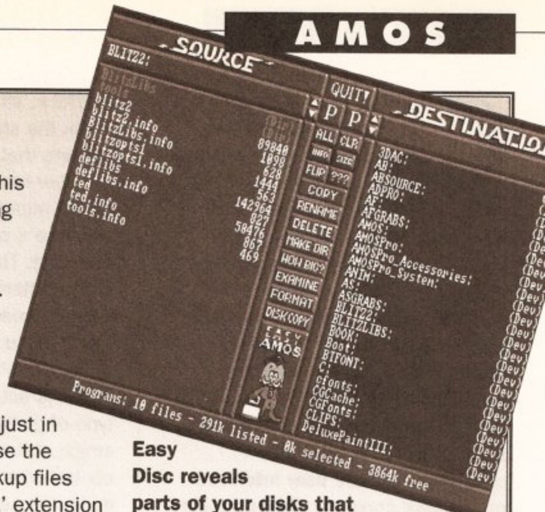
Jim Walkins
East Cowes, Isle of Wight

1. Having checked through my back issues, I can't understand why you're getting the error you've described. This sort of thing is usually caused by line breaks that are introduced when the pages are laid out, but there's only one line in the listing that has been broken. Start by checking that the comment line '*** THIS BLANKS THE LASER OUT' hasn't been typed in as two separate lines and if this doesn't solve your problem, go through the listing line by line to see that you've typed everything correctly. In particular, check that you've typed 'Loop' as the last line of the routine.

2. The *Easy AMOS* file requester allows you to use what are known as 'wildcards'. That is, only files that adhere to a specified search pattern are displayed. By default, the *Easy AMOS* file requester looks for files that end in '*.amos*'. If you save out your program without this extension, it will not be displayed. You can alter this search pattern by changing the '*.*amos*' part to '**'. This will display all files, regardless of their format.

3. When you save a program that has already been saved, *Easy AMOS* automatically makes a backup of the old version just in case you accidentally erase the latest version. These backup files are saved out with a '.bak' extension to differentiate between versions.

4. The listing doesn't run because it expects to find a file called 'ball.abk' on a disk called 'SOURCE:'. You'll have to create your own sprite bank in order to get the listing to work. The filename that was published is used as an example, to show you where the sprite bank should be loaded within the listing. You can create a sprite bank using the *Easy AMOS* Sprite Editor – see *AMOS* Answers in issue 17 of *Amiga Shopper* for more details on designing animations.



Easy Disc reveals parts of your disks that other programs cannot reach

VISITING THE LIBRARY

I've just bought myself a copy of *AMOS Professional* and I'd like to use the commands that allow *AMOS* to access the Amiga's operating system routines. I understand how to open a library and how to set up all the various parameters that need to be passed to the operating system routines, but I can't find any mention in the manual of the operating system routine offsets that are needed by the 'Lib Call' command. Where can I get this information?

Kevin Cecil
Streatham Hill, London

Try getting hold of a copy of the *Amiga ROM Kernel Manual* that documents the OS Libraries and Devices. This is published by Addison-Wesley and is available from most good book stores.

AMOS ACTION



LISTING • LISTING • LISTING • LISTING

```
' ** LIMIT = Maximum number
of characters

Procedure
_GETINPUT[X,Y,TIME,X2,Y2,LIMI
T]
Curs Off
TIME=(TIME+1)*50 : CLOCK=0 :
Timer=0
If LIMIT=-1 Then LIMIT=200

Repeat
A$=Inkey$
A=Scancode

If A<>0
If A=65
STRLEN=Len(STRG$)
If STRLEN>0
STRG$=Left$(STRG$,STRLEN-1)
End If
Else If A<>0
If Len(STRG$)<LIMIT
STRG$=STRG$+A$
End If
End If
End If

CLOCK=Int((TIME-Timer)/50)

Wait Vbl
Locate X,Y : Print STRG$+"_ "
Locate X2,Y2 : Print CLOCK;"
"

' ** Put your code in here if
you
' ** would like AMOS to do
something else
' ** as well.....

Until A=68 or A=67 or CLOCK=0

End Proc[STRG$]
```

Jason Holborn takes an in-depth look at AMOS Professional's Interface language. Find out what it can do for you

can swap between hardware-based and Intuition-based programming with ease, making *Blitz* ideal for both games and applications programmers. More importantly, *Blitz Basic 2* also fully supports both the new 'AGA' (double 'A') chip set and the new gadgets and requesters offered by Workbench 3.0. Europress Software claims that *AMOS* will be upgraded to include an Intuition extension later this year, but it seems that Acid Software has beaten it to it with a very aggressive new challenger.

I was lucky enough to have been sent a very polished pre-production copy of *Blitz Basic 2* and I have to admit that I was impressed with what I saw. Although *Blitz 2* is not quite as accessible as *AMOS*, its sprite and blitter object handling routines seem a lot faster. Rest assured that as soon as the full version arrives, I'll be bringing you a comprehensive head-to-head review of *Blitz Basic 2* and *AMOS Professional* to find out which offers the user the most in terms of performance and all-round flexibility. Watch this space!

Creating front ends for *AMOS* applications has always been a difficult and long winded process. Before *AMOS Professional* was launched, I was working on an application in *AMOS* that required me to create lots of fairly complicated requesters complete with buttons and slider gadgets. Although the gadget handling routine that I eventually wrote got the job done, it still required a good deal of manipulation in order to get the user interface responding correctly. What's more, it didn't multi-task, so any results that were usually produced by clicking on gadgets could be performed only when selection was complete and the mouse button was released.

> **"You'll soon come to realise that Interface is actually quite logical"**

And then along came Interface. Devised by Europress Software, Interface is a very clever (and potentially very powerful) AMAL-like sub-language which Europress built into *AMOS Professional*. Interface was designed specifically for the task of handling front ends within your applications. Indeed, Europress was so pleased with Interface that it actually used it to create all the various gadgets and requesters built into the *AMOS Professional* editor.

The program is a brilliant idea, but it is let down by an unnecessarily complicated manual. The aim of this article is to spare you the frustration of having to work your way through it, and concentrate on everything you need to know in order to create a working front end, consisting of buttons and a file requester-like active list controlled by a scroll gadget. Incidentally, a demonstration program of the material covered within this two-part tutorial can be found on this month's *Amiga Shopper Shareware Collection* cover disk. Load it into your copy of *AMOS Professional* – experiment with it and then study the source code.

TOUCH ME!

Interface is in fact very similar to the *AMOS* animation language, AMAL. Like AMAL, Interface 'programs' run under interrupt, therefore leaving your program to run at full speed regardless of how complex your front end is. In order to get some form of feedback from your user interface, all you have to do is to check the status of all the various gadgets that you've defined.

User interfaces are defined by writing mini-programs using Interface's own built-in programming language. This language is what makes Interface look so complicated – if you break through the jargon and take a good look at what it does though, you'll soon come to realise that it is actually quite logical. Each type of gadget is defined using a single statement with conditions that control what happens when the gadget is selected by the user. For example, if you wanted to have a gadget on the screen that the user could click on to load a file, it could be defined simply by including the Interface 'Button' command within your Interface program.

Interface programs are written into your *AMOS* programs in exactly the same way as AMAL programs. Every line of Interface code for a particular Interface program must be assigned to a single string variable that is passed to the Interface commands that make use of them.

DIGITAL MESSENGER

So where do we start? Well, the best way is to take a look at the various *AMOS* commands that are required to set up your user interface and then monitor any gadgets that are selected – we'll cover the Interface language later on.

The easiest way to create a front end using Interface is with the 'Dialog Open' (or 'Dialog Box') command that opens a communication channel between your *AMOS* program and the Interface program that you've written. *AMOS*' Interface communication channels are very similar to the message ports used by ARexx – like ARexx, the communication channel essentially acts as a link between two completely separate processes – think of it as a telephone line, if you wish. Without this link, your Interface program would be completely separate from your *AMOS* program and it would be impossible to get any form of feedback from your various gadgets. Although they would still work (buttons would be highlighted and scroll gadgets would scroll), your program would be totally unaware of such activity.

Interface doesn't place any form of limitation on the number of communications channels that you create. Providing that you've got enough memory, you can open as many Interface ports as you like. Each port is controlled by assigning it a number. When you need to access that port later, all you do to specify the port that you're interested in is to state its number. The Dialog Open command also needs to be fed the name of the string variable that contains your Interface program. For example, 'Dialog Open 1,a$' would create a communication channel numbered one, using an Interface program stored in the string variable 'a$'.

> **"The easiest way to create a front end is with the Dialog Open command"**

The Dialog Open command doesn't actually run your Interface program, though. All it does is to initialise the communication port and to set up the Interface process ready to be run. To get your Interface program running, you need to use

INTERFACE RULES

Interface programs have a very strict format that must be adhered to in order for your own programs to work correctly. Here's a quick rundown of the five commandments, according to Interface law. Learn them well, and you should have no problems with your programming.

1. All Interface programs must be entered into strings. Because the Interface language is separate from the *AMOS* instruction set, your Interface program must be assigned to a string variable that passes the program to the Interface control commands in AMOS

2. Each Interface instruction consists of two upper case letters – for example, the 'BU' instruction that is used to create a button gadget. Any characters that are entered in lower case are ignored, so you're free to use the space not only to add comments, but also to make the Interface commands themselves more readable by extending them within lower case characters – BUtton, for example.

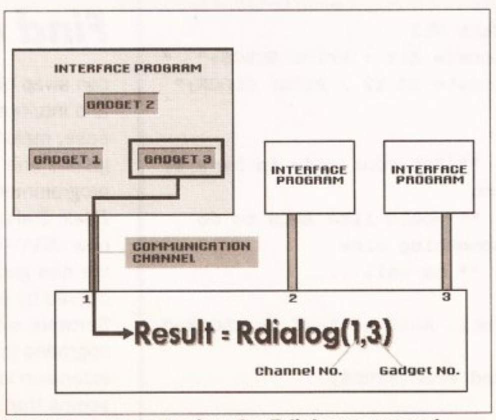
TALKATIVE GADGETS

Executing an Interface program that contains lots of lovely gadgets is all very well and good, but even the most sophisticated user interface is relatively useless unless your *AMOS* program can detect when the user clicks on to your gadgets. Contrary to popular belief (and judging by the comments in your letters, you wouldn't believe the number of people that have encountered problems with this!), detecting the selection of an Interface gadget is very simple indeed.

All you need to do is to read the value returned by the 'Rdialog' instruction. Each and every gadget that you define returns its own values, so you must specify the gadget that you're interested in when using the Rdialog command. As a result of this, every gadget must be checked individually if you wish to keep track of any possible gadget selections. This can be made considerably easier though by using a FOR...NEXT loop that runs through each gadget in turn, finding out whether it has been selected since the last time you checked it. In order to pinpoint an individual gadget, Rdialog needs to be told the number of the communication channel that reads the gadget followed by the number of the gadget. Here's an example.

```
A = Rdialog(1,3)
```

The above example would return the status of gadget number three through communication channel 1. The resulting value is then placed into the variable 'A' which can then be 'interrogated' to work out whether the gadget has been selected before.



Gadgets are read using the Rdialog command

AMOS PRO Interface

Jason Holborn battles his way through a hostile manual to demystify AMOS Pro's powerful 'Interface' language and brings you part one of a new tutorial

3. Each and every command must be terminated by a semi-colon (;). Interface uses semi-colons to separate commands, so you must always place a semi-colon character between each command.

4. All Interface programs must be terminated with an 'EX' (exit) command. If *AMOS* fails to find an 'EX' instruction, an error will automatically be produced.

5. Always close down an Interface program once it has served its purpose. If you keep a redundant Interface program running, it will just eat up memory and slow down the performance of your machine.

the 'Dialog Run' command. Dialog Run only needs one parameter – the number of the communication port that your Interface program has been assigned to. If everything went OK, issuing a command such as 'Success = Dialog Run(1)' would start the Interface program running. The 'Success' variable can be used afterwards to find out whether the program ran OK.

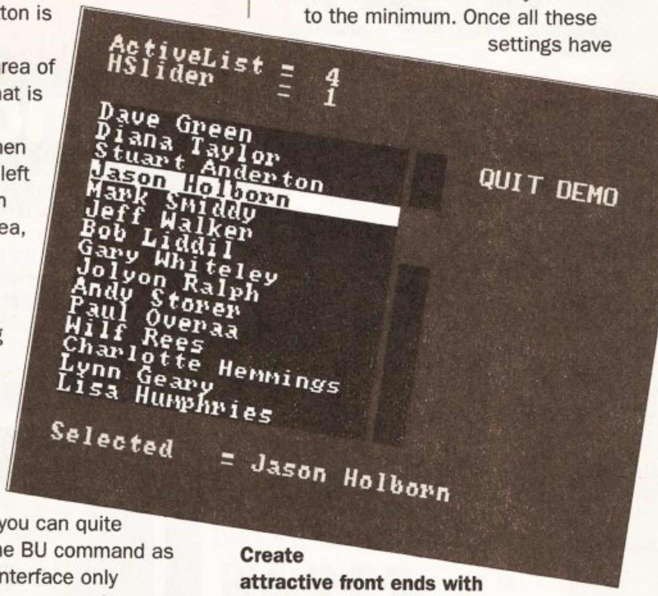
Finally, you can turn off an Interface program using the 'Dialog Close' command. Dialog Close must always be used in order to free up the memory and close the channel used by your Interface program. Try not to break out of a program while an Interface program is still running, too – if you do, you may find that your keyboard doesn't respond too well in direct mode as a result.

PIECE OF STRING

Now we know how to launch an Interface program, we need to learn how to actually write the program in the first place. As we've already discovered, Interface programs are embedded into your *AMOS* program by defining a string variable that is used to pass the Interface program to the 'Dialog Open' command. Entering an Interface program into a string variable is exactly the same as assigning a value to any variable. All you have to do is to specify the name of the variable (a$, for example) followed by the assignment. For example, 'a$=" EX;"' would assign the simplest Interface program you could possibly write to the variable 'a$'.

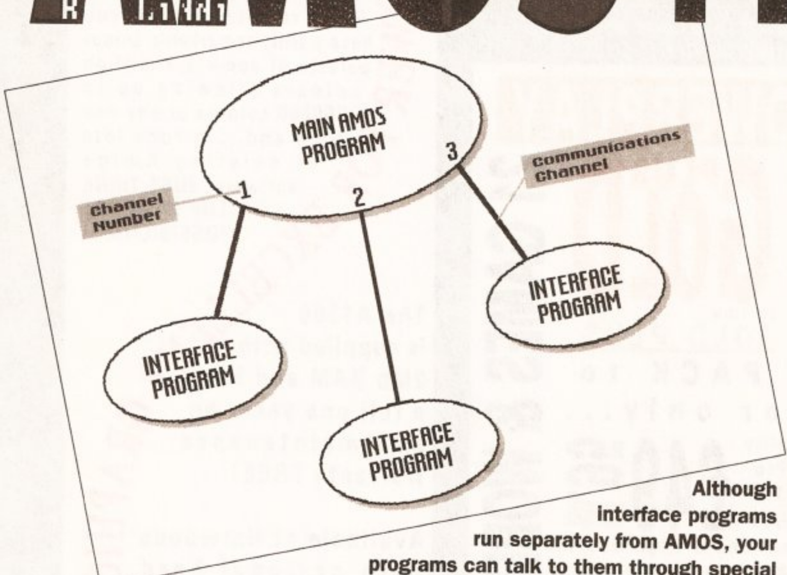
"Each program can have an almost unlimited number of gadgets"

Creating gadgets within your Interface programs is quite straightforward. Each program can have an almost unlimited number of gadgets, which are individually recognised using a unique gadget number. Several gadgets can share the same gadget number, but I can't really see the value in this feature. Possibly the most basic gadget you could create is a button. A button is simply a rectangular area of the screen that is marked as a 'hotspot'. When you click the left mouse button within this area, the button is selected. Buttons are created using the 'BU' command. If you want to make your Interface program a little clearer, you can quite easily write the BU command as 'BUtton'. As Interface only recognises upper case characters, the 'tton' part of the word will be ignored – so you could even write 'BUrp' if you wanted (and could remember what it stood for!). Don't include any of the extra letters in upper case though (by keying in BUTTON, for example). If you do, an error will be produced.



Create attractive front ends with AMOS Pro's Interface language

The Button command needs a number of different parameters – the button number, its x and y position on the screen, its width and height (expressed as screen pixels), an initial value for the button (each time the button is 'pressed', this value will be incremented) and the minimum and maximum values for this initial value. If the value increases to the maximum specified, *AMOS Pro* will automatically reset it to the minimum. Once all these settings have been made, a separate set of Interface commands enclosed within square brackets are used to tell *AMOS* how to draw the gadget on the screen. Without these instructions, the button will be invisible, although it will still work. A second set of square brackets can also contain a list of Interface instructions which are to be executed once the button has been selected. You could, for example, quit out of the Interface program straight away simply by enclosing the 'ButtonQuit' command ('BQ' for short). AS



Although interface programs run separately from AMOS, your programs can talk to them through special communication channels

NEXT MONTH

If all this talk of communication channels and button numbers has you panting for more, then stay tuned for next month's *AMOS Action* when we'll be taking a look at Active Lists and Scroll gadgets. Meanwhile, why not check out the Interface demo on this month's cover disk?

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Time... Have you ever noticed how life's full of it – but these days there never seems to be enough to go around? Now, just when you thought it was safe to go back to your computer, the ghost in your startup-sequence is back with a vengeance. *Pest 3* can be programmed to pop up and remind you of any appointment at any specified time (accurate to within a minute or so, depending on processor load) and it won't even run down your battery. *Pest 3* will run on any Amiga with AmigaDOS 2 (or above) and a real-time clock. A very powerful Workbench 3 specific version has been included for those lucky enough to have such luxuries.

Before launching headlong into a discussion of this latest *Pest*, it's worthwhile recounting how the original worked. *Pest* relies on reading the date from the internal BB-RTC and comparing it with a known date held in a file. *Pest 3*, in its most basic form, works in a different fashion – more like an event clock: you set a timed event, some time in the future, and *Pest* will "wake up" on (or slightly after) that event. The basic function is all based on a little used feature of the AmigaDOS WAIT command: here is the command's complete template:

```
WAIT /N, SEC=SECS/S, ↵
 MIN=MINS/S, UNTIL/K:
```

The part we are interested in here is the keyword UNTIL. This forces WAIT to halt any CLI process until a specified time – rather than FOR a specified time interval. Times are entered in 24 hour clock using the following format:

```
HH:MM
```

LISTING 1 • LISTING 1 • LISTING 1 • LISTING 1

Listing 1: Pest 3 – AmigaDOS 3 basic version

```
.key time/a,Message
.def Message "Wake up - time to die"
.bra {
.ket }
run <NIL: >NIL: wait until {time} +
RequestChoice >NIL: "Pest" "{Message}" "OK"
```

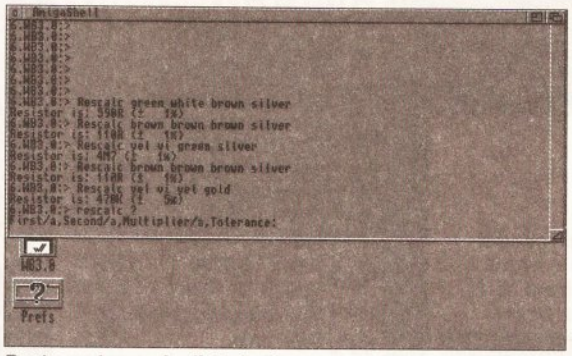
So, examples of valid times are 9:00; 12:00; 15:04 and so on.

(Using the DATE command reveals that AmigaDOS counts time in seconds too, but an exact seconds count cannot be guaranteed because of constraints imposed by the multi-tasking environment. It is possible to write a program which will get very close – but this is unlikely to be of any real benefit and in itself would hog too much processor time.)

So much for the theory then: what happens in practice? Try entering an example like this (the exact time entered depends on what time you are trying this):

```
1>WAIT UNTIL 4:24
```

This example sets a time when most sane folk are tucked up in bed and only the most dedicated computer freaks are excitedly bashing at keyboards. However, it is most likely your Shell has just frozen and gone to sleep. You could reset the machine now, or even wait until half-four in the morning – but a much more sensible approach would be to stop the command. Press CTRL and C together to "break" WAIT's effect.



***Pest* events can be listed using the supplied utility**

Now let's put some more theory into practice. Start a new Shell (either from the existing one or Workbench, it doesn't matter for this). In the second Shell, which I'll call CLI 2 here, enter this:

```
2>WAIT UNTIL 5:00
```

Now click back in the first Shell and enter this:

```
1>STATUS COMMAND WAIT
 2
```

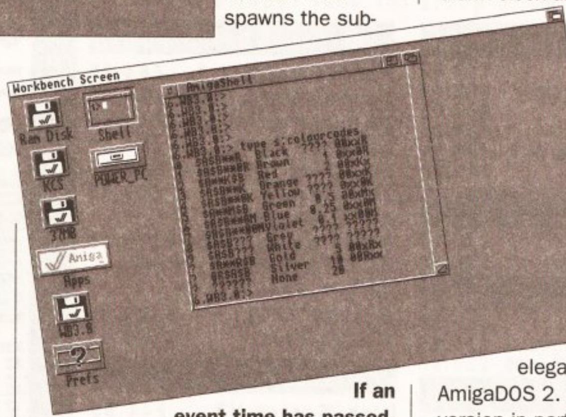
Notice how AmigaDOS responds with the number of the CLI (Shell) process which is running WAIT?

Experienced AmigaDOS users already know how to start a new command in its own sub-Shell like this:

```
1>RUN WAIT UNTIL 5:00
[CLI 3]
```

While this system is perfect for many commands, it has no real practical purpose when used directly with WAIT. Several problems occur in fact:

- When RUN spawns the sub-process there is no way to signal back to the main process the WAIT command has completed.
- The WAIT state cannot be broken directly from the keyboard with CTRL+C – try it.



If an event time has passed, *Pest* warns you and lets you view it

Taking this one step further by removing the "[CLI #]" message causes its own problems. Try this:

```
1>RUN >NIL: WAIT UNTIL ↵
 5-00-00
```

Everything seems to go according to plan but the error in the command line is not reported and WAIT does not start. Now to add insult to injury, here's the final fly in the ointment. Start a new Shell and enter this (for the sake of clarity, Shell's output has been shown):

```
1>RUN WAIT UNTIL 3:00
[CLI 4]
1>ENDCLI
Cli Process 4 ending
```

LISTING 2 • LISTING 2 • LISTING 2 • LISTING 2

Listing 2: Pest 3 – AmigaDOS 2 basic version

```
.key time/a,Message
.def Message "Wake up - time to die"
.bra {
.ket }
run <NIL: >NIL: wait until {time} +
echo >pipe:A{$$} "{Message}" +
more pipe:A{$$}
```

No matter what you do, Shell 4 will not go away! In fact, this Shell window will stay open until the WAIT command has completed or is forcibly stopped.

All this discussion may seem far removed from *Pest* – but in truth it is all inextricably intertwined. The last two examples illustrate the events possible if *Pest* were started from from the initial Shell window: therefore some kind of error checking will be required.

YOUR BASIC PEST

The most basic version of *Pest 3* forms a simple, message-based, alarm clock and may be sufficient for many needs. It could be run from a startup-sequence because a special technique has been used to allow the machine to start normally – more of that in a moment. Two versions are supplied here: one for AmigaDOS 3 and a less elegant version for AmigaDOS 2. The AmigaDOS 3 version in particular can be run several times from the User-startup to warn of regular timed events – lunch, *Star Trek* or *Coronation Street* for instance... None of the simple scripts listed here does any error checking on the time format, so it is up to you to get it right. Nevertheless they will not interfere with the machine's normal running: I have several *Pest 3*.0 alerts running while I'm writing this text.

HOW IT WORKS: LISTING 1

Let's examine the simplest *Pest* first – the one constructed for AmigaDOS 3: it shows the most important techniques without the extra fuss required for other versions. *Pest 3* should be created and saved as *Pest* giving it the following synopsis:

```
[EXECUTE] Pest <time> ↵
[Message]
```

EXECUTE is shown in brackets because it is more usual to set the script's "S" bit and call it like a normal command. Assuming this has been done you can call *Pest* from User-startup like this:

```
Pest 16:47 "Close all files ↵
 - Star Trek is about to ↵
 start on Sky 1"
```

Note that the quotes around the message are required by the syntax but do not actually print out on screen as part of the message.

You can set one or more time

CRACKING the shell



Mark Smiddy adds time features to the infamous Pest AmigaDOS appointment scheduler

events from any Shell like this:

```
1>Pest 18:00 "Looks like ↵
 you missed Star Trek then..."
```

– although these events will be destroyed by a reset. Here's a blow-by-blow description of how it works.

1. Defines the argument template. This will force the user into entering a time, but the message you want to display is optional.

2. Sets the default message string – you can enter any default message here. (The quote used in the listing is from Ridley Scott's *Blade Runner.)*

3-4. Re-define the **bra** and **ket** characters from the default < and > to { and }.

5. This is a special syntax of the RUN command – little used but very useful for *Pest*. Two re-direction operators – < and > – send input and output to the NIL: device. This stops the sub-process started by RUN from getting hold of the current console handles. If this were allowed to happen, the CLI window would stay open until the command is completed – and this is very messy. At the end of the string a "+" is used. This tells RUN to halt and wait for further command lines. Many commands can be chained in this way – when the last command line is encountered (the first one without the +), RUN actually starts. Some explanation is needed here:

```
1>RUN DIR +
1>LIST
[CLI 2]
```

is similar to:

```
1>NEWSHELL
2>DIR
2>LIST
```

but *not* the same as:

```
1>RUN DIR
[CLI 2]
1>RUN LIST
[CLI 3]
```

Note: the symbol ↵ in listings means *do not* type a return – the line is simply too long for our narrow columns

In this last example you can see how each RUN starts a completely new Shell process and this is the key. You can enter these examples to see the effect – it works on all versions of AmigaDOS.

6. Starts the new process structure opened at Step 5 and places **RequestChoice** in the command list. This line is not executed until the WAIT command times out (or is broken), and then a requester appears with your message and a single OK box. Re-direction to NIL: is used here to prevent **RequestChoice** from reporting the gadget return (always 0 for this script). However, since the process has been started in the background (RUN) the script is completed and exits normally back to the calling Shell (or startup-sequence script, as the case may be).

HOW IT WORKS: LISTING 2

1–5. Work in exactly the same way as described above.

6. Adds the command line to the RUN list – the process is *not* started here. When WAIT times out, the message is sent to a named pipe which is processed...

7. ...here. This starts the RUN

JARGON BUSTING • JARGON BUSTING

BB-RTC – Battery-backed-up real-time clock. The internal hardware-based clock located inside most Amigas in current use. The necessary electronics are included on many of the 'trapdoor' expansions for early A500 machines.

LISTING 3 • LISTING 3 • LISTING 3 • LISTING 3 • LISTING 3 • LISTING 3 • LISTING 3 • LISTING 3 • LISTING 3

Listing 3: SetPestEvent

```
.key time/a,Message,day/k
.def Message "Brrrrrrrring"
.bra {
.ket }
if {day} not eq ""
   date >T:TPToday
   search >NIL: t:TPToday "{day}"
   if warn
      delete >NIL: t:TPToday
      skip out
   endif
   delete >NIL: t:TPToday
endif
echo >env:edt{$$} " {time}" len=7
echo >env:hrs{$$} "$edt{$$} " ↵
 first=1 len 2
echo >env:mns{$$} "$edt{$$} " ↵
 first=4 len 2
echo >env:apm{$$} "$edt{$$} " ↵
 first=6 len 2
set hrs $hrs{$$}
set hour $hrs
set mns $mns{$$}
set mins $mns
set apm $apm{$$}
if $apm NOT EQ "am"
  set apm "pm"
endif
if val $hrs GT 12
  RequestChoice >NIL: "Pest" "Enter ↵
 time 12-hour (am/pm) clock*nEg.
12:40pm; 10:20am*n'pm' is default" "OK"
  quit 5
endif
if val $mns GT 59
  RequestChoice >NIL: "Pest" "Error: ↵
 there are only 60 minutes in an ↵
 hour!" "Ummm.."
  quit 5
endif
if "$apm" EQ "pm"
  if val $hrs NOT GT 11
   eval ($hrs + 12) mod 24 to
env:hrs{$$}
   set hrs $hrs{$$}
  endif
endif
if "$apm" EQ "am"
  if val $hrs EQ 12
    set hrs 0
  endif
endif
set EventTime $hrs$mns
date >T:TimeNow
echo to T:EdTime "2(dta/ /);2>;#;2>;3#"
edit T:TimeNow with T:EdTime to ↵
 env:TimeNow
if val $EventTime NOT GT $TimeNow
   RequestChoice >env:RQ{$$} "Pest" ↵
 "Requested event time: {time} has ↵
 already passed.*nShould I wait until ↵
 tomorrow?" "Yes" "What was it?" ↵
 "Forget It"
   if $RQ{$$} EQ "0"
     skip out
   endif
   if $RQ{$$} EQ "2"
      RequestChoice >NIL: "Pest ↵
 Override Message" "{Message}" "OK"
      skip out
   endif
endif
echo >env:hms{$$} " $hour:$mins$apm" ↵
 len=7
eval $PestEvent +1 to env:PestEvent
resident name=wait$PestEvent ↵
 file=c:wait add
echo "Event $PestEvent set at ↵
 $hour:$mins$apm ($hrs:$mns)"
echo <NIL: >ENV:Pvent$PestEvent ↵
 "$PestEvent.*e[I$hms{$$}*e[I*e[32m++↵
 Active++*e[31m*e[I{Message}"
run <NIL: >NIL: wait$PestEvent until ↵
 $hrs:$mns +
execute >NIL: KillPestEvent $Pest↵
 Event "+Complete+" sys=QUIT +
RequestChoice >NIL: "Pest `date`" ↵
 "{Message}" "OK" +
Resident wait$PestEvent remove
lab out
```

(For how this works, don't miss next issue!)

process opened at Step 5 and allows the script to complete. When execution arrives here (after WAIT is complete) the current contents of the pipe are displayed using **more.**

AFTER DARK

This is OK if you like using the 24-hour clock – but it might be more convenient to use AM and PM instead. This makes things a little more fraught because the time has to be split into three separate arguments, converted into 24-hour format. There are many variations on this theme, but space is too limited to go into any detail so we have listed the most powerful Workbench 3 version here. This version actually splits into three modules: the first (and largest) sets the events, the second and third perform housekeeping functions. Here's what they do:

```
[EXECUTE] SetPestEvent ↵
 <time> [Message] ↵
 [Day=<dayname|date>]
```

This is the main module and can be called at any time, including during a startup-script to set a timed event. Time is entered in 12-hour clock with AM/PM added optionally to define morning or afternoon – PM is assumed if nothing is specified. Other than available memory, there is no limit to the number of events that can be set. Examples:

```
SetPestEvent 10:00am ↵
 "Tea break"
SetPestEvent 12:00pm ↵
 "Time for lunch"
SetPestEvent 5:30 "Time ↵
 to go home"
SetPestEvent 6:00 "Star ↵
 Trek on BBC 2" day=Wednesday
SetPestEvent 3:30 "Go to ↵
 dentist" day="12-Mar-93"
```

If the specified event time has already passed, *Pest* will warn you and give the option to view the message or wait anyway – this can be done to set an event up to 23 hours into the future. An optional day name or date can be specified to set the event on any particular day or date. Dates are *not* checked for validity in this version, but you can use partial dates like this:

```
SetPestEvent 9:00am "First ↵
 of the month today, huh?" ↵
 day="1-"
SetPestEvent 9:30am "It's ↵
 March!" day="Mar-93"
SetPestEvent 12:30pm "Valen.↵
 tines day" day="14-Feb"
```

```
[EXECUTE] ListPestEvents
```

This module lists all the events set since the last reset and their status under the following headings:

Event – the event number (assigned by SetPestEvent – that is, Listing 3).
Time – the time the event is set for.
Status – the event's status: Active, Completed or Deleted.
Message – the message associated with the event.

```
[EXECUTE] KillPestEvent ↵
 <number> [Message] [Sys]
```

The final module is used to delete any running *Pest* event. Although events can be deleted directly, it is more polite to do it using this script. This will ensure the active status of all events is kept up to date. The number of the event to break is displayed by ListPestEvents and the SYS and MESSAGE arguments are reserved for use by the *Pest* system.

HOW THEY WORK

There is not enough room here to describe the largest module – SetPestEvent, Listing 3 – here. We'll cover that next month, along with some suggestions for conversion to AmigaDOS 2 (and if we get enough letters asking for it, AmigaDOS 1.3).

HOW IT WORKS: LISTING 4

1–3. Sets template and re-defines **bra** and **ket.** Note the template is a dummy but it must be present to force AmigaDOS to parse the script correctly.
4. Creates a temporary file with the heading for the printout. Note the string "***e[I**" is a tab character.
5. Lists all the global environmental variables starting with **"PVent".** One of these is created for every event. This creates a script with a format like this:

```
TYPE >>T:temp1.2 env:PVent3
TYPE >>T:temp1.2 env:PVent1
TYPE >>T:temp1.2 env:PVent2
```

...and so on...
6. Runs the script created at Step 5. The output from this is tacked on to the header and creates a list of the current events. See the description of SetPestEvent (Listing 3) for the format of these.
7. Displays the list of current events created at Step 6. If you use *Pest* a lot, you might consider changing TYPE for MORE.
8–9. Delete the temporary files and free up some memory.

LISTING 4 • LISTING 4 • LISTING 4 • LISTING 4

Listing 4: ListPestEvents

```
1. .key none
2. .bra {
3. .ket }
4. echo >T:temp1.{$$} "Event*e[ITime*e[IStatus ↵
 *e[IMessage"
5. list env:PVent#? lformat "type >>T:temp1.{$$} %s%s" ↵
 to T:temp{$$}
6. execute t:temp{$$}
7. type t:temp1.{$$}
8. delete t:temp{$$} quiet
9. delete t:temp1.{$$} quiet
```

LISTING 5 • LISTING 5 • LISTING 5 • LISTING 5

Listing 5: KillPestEvent

```
1. .key Event/a,message,sys
2. .bra {
3. .ket }
4. .def Message "++Deleted+"
5. status >T:Kill{$$} command=Wait{Event}
6. if not warn
7.    break <T:kill{$$} >NIL: all ?
8.    echo "Bang! Event: {Event} bites the dust"
9. else
10.   echo "Error: That event has not been set?"
11.   if "{sys}" EQ ""
12.     skip end
13.   endif
14. endif
15. echo >T:Kill{$$} "F/{Event}./;pa/:/; pa/[I/;15#; ↵
 B//{Message}/;"
16. if exists env:PVent{Event}
17.    edit env:PVent{Event} with T:Kill{$$}
18. endif
19. lab end
20. delete T:kill{$$} quiet
```

HOW IT WORKS: LISTING 5

1–3. Define the argument template and re-define the **bra** and **ket** characters.
4. Sets the default message parameter. This occurs when KillPestEvent is called by a user – SetPestMessage sends its own message.
5. Checks the status of a WAIT command numbered by the event number. If this exists it is sent to the file "T:Kill"; if not, the WARN condition is set.
6. Checks if the WARN flag was clear (if the WAIT exists). If it is, execution continues at Step 7; otherwise it jumps to Step 9.
7. Uses an interactive break to stop the WAIT event checked at Step 5. Re-direction to NIL: prevents BREAK's argument template appearing and messing up the display.
8. This confirms the event has been deleted.
9. Execution arrives here if the WAIT event was not found and continues...
10. ...here, where it prints an error. (This error is not displayed by Set-PestEvent, even though it occurs.)
12. Checks if the script was called by the *Pest* system (SYS<>"") and if so, execution jumps to Step 14. Otherwise it continues at Step 13.
13. Forces execution to jump to the label at Step 20.
14. Terminates the IF...ENDIF construct opened at Step 12.
15. Closes the IF...ELSE...ENDIF construct opened at Step 6.
16. Writes an EDIT script – here it is in longhand:

1. **F/{Event}./**
2. **PA /:/**
3. **PA /[I/**
4. **15#**
5. **B//{Message}/**

or:
1. Find the line starting with the event number.
2. Move the cursor after the ":" in the event time.
3. Move the cursor after the next TAB.
4. Delete 15 characters
5. Insert the message at the current position plus a tab.

17. Checks to make sure the Event global is available.
18. Replaces the "++Active++" message in the global with the message defined at the command line. SetPestEvent sends "Completed" by default.
19. Terminates the IF...ENDIF construct opened at Step 17.
20. This marks an exit point if something has gone wrong earlier in the script. It is ignored otherwise.
21. Deletes the temporary file and frees up some memory. AS

• The source code for *Pest* can be found in the Source_Code directory of this issue's cover disk.

The Board Walk

Dave Winder reveals his best bulletin board secrets in the first of a new series on going on-line

Some months ago, I made an appeal to comms users for details of their favourite boards, in preparation for this feature. One bulletin board, Red Rose, seemed to feature very prominently in the replies I collected, so we'll use it as our example to give you the first in a series of behind the scenes looks at the world of bulletin boards.

EARLY DAYS

The Red Rose BBS (Bulletin Board System) first saw the light of day in December 1989, under the name of Preston Rose. At that time it was being operated on an Amstrad CPC 6128, running CP/M.



Top: Monty Python, Red Dwarf, Terry Pratchett, and there's even some areas to talk about the Amiga!
Bottom: Just some of the file areas available

In April 1990 the computer changed to an Amiga 2000, and the name changed to Red Rose.

Based in Preston, Lancashire (hence the board's original name) the BBS is in the very capable hands of Tony Walker. Tony is in his early forties, and first started his love affair with comms back in 1986, with a lowly Amstrad CPC 464 computer and a very slow V21/V23 modem. Things are a bit different now; the Red Rose of the nineties is based around a 68030-powered Amiga 2000 boasting 9.5Mb RAM and a 220Mb hard disk, coupled with a very fast Courier HST modem.

...NEWS UPDATE ...NEWS UPDATE ... NEWS UPDATE

If you were paying attention in AS21 you will remember I reported on a proposed campaign by the Federation Against Software Theft and the European Leisure Software Publishers Association to require the licensing of all UK Bulletin Boards. *Amiga Shopper* brought you the news first, as usual, and pretty soon everyone who was anyone in the comms world was getting involved. A lot of discussion went on around FidoNet, AmigaNet, InterNet, and CIX, as a result of which an organisation to represent the on-line community in the UK is well on its way to being formed. The group, as yet unnamed, will work to promote the benefits of computer communications, encourage and support the free flow of information, try to increase public awareness of the technology involved, and not least protect the rights of the people who use it. A meeting was organised between representatives of both FAST and ELSPA, as well as members of the on-line community, with Emma Nicholson MP to discuss the issue of BBS Licensing. This resulted in FAST and ELSPA abandoning their plans for BBS regulation. I don't think they realised the depth of feeling they would stir up with this proposal, and hopefully they now have a greater understanding of how both BBSs and Sysops operate.

CAUGHT IN THE NET

Red Rose is a FidoNet Node, which means that the BBS is part of the FidoNet system. FidoNet is a network of BBSs, which pass information to each other. This information can take the form of mail messages, messages in specific conferences (Echomail areas), and so on. It is also possible to request files that are held on another BBS in the the network, and have them delivered to your computer by the wonders of comms. Currently there are over 10,000 BBSs acting as FidoNet Nodes, which converts into many tens of thousands of individual users. As well as FidoNet, Tony is also running as an AmigaNet Node.

JARGON BUSTING • JARGON BUSTING • JARGON BUSTING

FidoNet – A worldwide network of BBS systems.

AmigaNet – A new network much like FidoNet, only much smaller.

Node – Part of the FidoNet/AmigaNet system.

InterNet – A network of computer systems, comprising of universities, commercial sites etc. Much larger than FidoNet, comprising over 800,000 sites.

BBS – **B**ulletin **B**oard **S**ystem.

V21 – Put simply, a speed of 300 bits per second.

V23 – 1200/75 bits per second. Mainly used for Viewdata systems such as Prestel.

V32bis – A speed of 14,400 bps. Currently the fastest available.

HST – **H**igh **S**peed **T**echnology. A proprietary error control system used by Miracom.

V.Fast – A proposed standard of 28,800 bits per second.

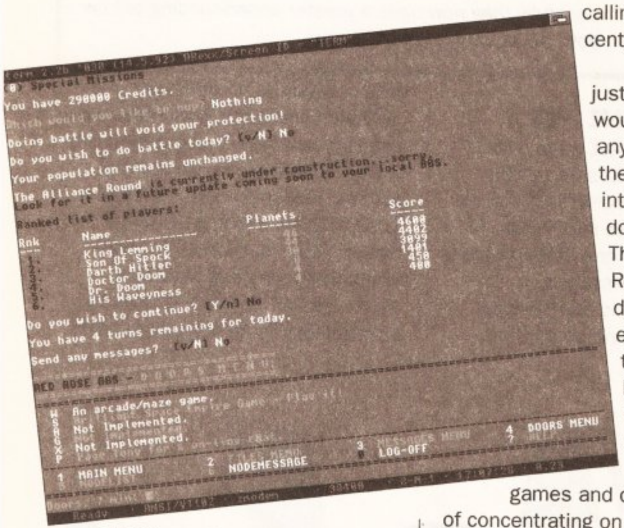
V32.turbo – Another proposed standard, of 19,200 bits per second.

Echomail – An area to talk about a specific subject, a public conference, on a FidoNet system.

Sysop – **Sys**tem **Op**erator, the person who runs the BBS.

...NEWS UPDATE ...NEWS UPDATE ... NEWS UPDATE

Good news for those of us who just can't seem to get enough speed out of the network. Faster modems are just around the corner – faster than HST and faster than V32bis. Currently the fastest you can expect from a top of the range V32bis modem is 14,400 bits per second. The new modems will be using a standard known as *V.Fast* which will have a top speed of 28,800 bps. This sort of speed won't be actually achievable over most standard phone lines just yet, though. The best speed we could expect to get in the UK would be around 19,200 bps – which is still an impressive rate. Transatlantic calls will probably not be much quicker than the existing V32bis standard. *V.Fast* has some competition from a rival group of manufacturers who are pressing forward with a standard known as V32.turbo. This is expected to have a top speed of 19,200 bps, so look out for commercial warfare if and when these modems hit the streets.



Will Wavey Davey take over the entire universe?

AmigaNet is very similar to FidoNet in principle (see the Jargon Busting Box for more detail on the two networks), but it is much younger, and is primarily based in the USA.

WHY RED ROSE?

Red Rose boasts a wide selection of message areas, with topics to satisfy most people's curiosity. As you can see from the screenshots on the previous page, there are plenty of areas to choose from.

Most of these areas are very busy indeed, and because FidoNet is a global network you can exchange views with fellow enthusiasts worldwide. The disadvantage of a system like FidoNet over, say, CIX (Compulink Information eXchange), is that because messages are transferred between systems all over the place to get them read, it can be some time before a reply to your point is received. On CIX, a reply can be almost instant, as everyone is calling into the same central system.

But it's not all just talk; as you would expect from any decent BBS, there are plenty of interesting files to download as well. The file areas of Red Rose have a distinctly down-to-earth feel about them, chiefly because Tony likes to discourage uploads of games and demos in favour of concentrating on promoting Red Rose as a serious place to be. Oh, and don't even consider joining and asking for access to the 'elite' areas (not that any *Amiga Shopper* readers would, of course), as Tony operates a strictly-enforced no piracy policy.

As with any serious BBS, there are some restrictions on the number of files you can download. This has to be done to prevent the system being picked clean by file vultures who join boards just to grab files and not actually participate in any way. Currently you can download at a ratio of 5:1 – that is, 5 files for every 1 you upload. There is also a limit of 30 minutes a day on-line time to non-subscribers. If you are looking for something in particular which isn't available on Red Rose, there is even a file request area where you can have a file hunted down for you.

If you really must play games over the telephone, then Red Rose has not forgotten you. There is a rather good *Space Empire* game available for budding Emperors of the Universe. As you can see from the screenshot on the left, "His Waveyness" (that's me) is ranked at number 6 in the Galaxy at the moment, but I'm sure you could do a lot better than that!

FUTURE PLANS

Tony is forever looking at ways in which to improve the service that Red Rose offers, and that can only be good news for you. Within the last few weeks he has taken the plunge and changed the system that his BBS runs under from *TransAmiga* to *Xenolink* BBS software. *Xenolink* is a system I have not had much experience of, but I am sure that it won't take too long to get used to. A second telephone line is high on Tony's list of improvements, together with more hard disk storage space. Tony would also like to introduce CD-ROM storage for Red Rose, although admittedly this is some way off yet.

A SMALL PRICE TO PAY

Most BBSs are run by enthusiasts for no profit at all, and Red Rose is no exception. The only way that enhancements can continue to be made is if users support the board and its Sysop. Red Rose offers an attractive subscriber service, although Tony is quick to point out there is no pressure on anyone to subscribe unless they want to. A subscription costs just £15 per year, and that increases your on-line time from 30 to 90 minutes a day. Also, the file download ratio is greatly improved, from 5:1 to 100:1. The message is pretty clear; if you use this BBS (or any BBS for that matter) and you like it, then support it as much as you can. The benefits are mutually attractive. **AS**

RED ROSE BBS

Sysop: Tony Walker
Telephone: 0772 652212
Hours: 24 hours a day, every day
Speeds: All speeds up to and including V32bis, as well as HST
FidoNet: 2:252/309.0
AmigaNet: 39:137/1.0

CONTACT POINT

Dave Winder, better known as Wavey Davey, can be contacted by E-Mail as:

dwindera@cix.compulink.co.uk

GOING ON-LINE FOR THE FIRST TIME

So you like the look of Red Rose (or any BBS for that matter), but don't have a clue as to how to actually log on? Fear not, Wavey Davey is here to help.

First of all you will need to make sure your terminal software is correctly set up. Once you have started your program of choice, make sure it is communicating with your modem by typing **AT**. You should get a reply of **OK** if your modem is switched on and the Amiga is talking to it. Next, drop into the serial preferences menu and ensure that you have the following options set:

Bits = Eight
Parity = None
Stop Bits = One
Handshaking = RTS/CTS

Next, you will need to enter the telephone number of the BBS into the 'phone book' of your terminal software, and then just ask to dial that number.

You'll know when you are connected to the board, as your modem will stop ringing and start making a few nice bleeps. When it comes back with a message saying "connected" or similar, press the [RETURN] key to get things moving. Many boards require you to press the [ESC] key a couple of times as well, or wait for 20 seconds or so. You will then be greeted with a welcome screen, and a prompt asking for your name. If you are a new user it won't have you in its log and will ask if you are new to the BBS. You will then need to answer a short questionnaire about yourself and your equipment. Just follow the instructions, and be honest. Usually the BBS will want to know your name and address and telephone number. If there are questions of a technical nature that you are unsure of, just press [RETURN] and select the default. Nine times out of ten this will work OK for you.

Once you have been accepted as a new member of the BBS, check out the menus and head straight for the files that tell you about the board and what is expected of you while visiting. Also, mail the Sysop before leaving, just to let him know you are there and give him feedback on what you think of the BBS.

Don't give a false name or address – these things are always checked out, and you will only find your access denied next time you try and log on. Do observe the rules of the BBS; they are there for a reason.

Above all else, remember that we all went through the pains of logging on to a BBS for the very first time; don't worry about looking like an idiot, because nobody will think that. You will find that the wonderful world of comms is just full to the brim with people who are more than willing to help you every step of the way. Enjoy it – that's what it's there for!

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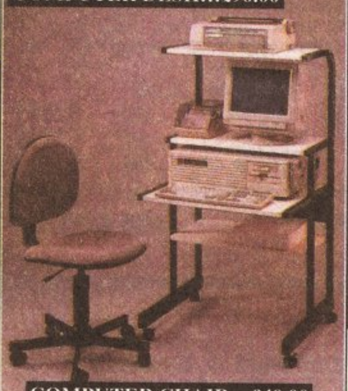
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So how's your ARexx coding coming along? If you've been following my column over the past few months, then the chances are that you're becoming fairly proficient at writing scripts that can take input from the user, interpret command line arguments and manipulate strings and numbers. All pretty dandy stuff, but there's still one limiting factor – any ARexx script is only as useful as the information that you feed to it in the first place. Or, to be more precise, the more information you are able to feed to a script, the more you'll get out of it.

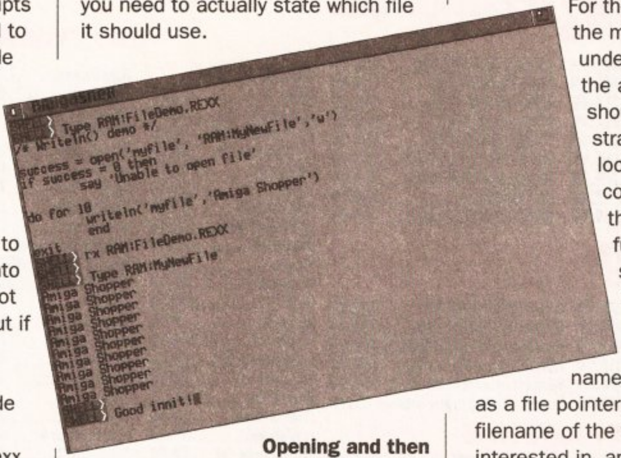
> *"Any Arexx script is only as useful as the information you feed to it"*

This month we will be extending our ARexx scripts by allowing them to process information stored within external files, and even write to files themselves. Adding some form of file handling facility to your ARexx scripts will make them much more useful to you. Although it is possible to code an ARexx script that gets the job done without having to resort to file handling, the resulting script is usually pretty limited in its scope. Imagine a script that processed a list of names and addresses – if all the information to be processed was 'hard coded' into the script, it wouldn't really be a lot of use. OK, it would do the job, but if you then wanted to process a different set of names and addresses, you would have to code the whole thing again.

Adding file handling to an ARexx script will also allow you to code your own AmigaDOS commands without having to resort to complicated programming languages such as C or assembler. In fact, very few of the existing AmigaDOS commands couldn't have been coded in ARexx, so it's a perfect choice if you need to code an AmigaDOS command that isn't already available. Thanks to its powerful string manipulation functions (we covered most of them last month), ARexx makes short work of processing complex files.

OPEN WIDE

Like most programming languages, ARexx relies entirely on what are known as 'file pointers' in order for it to gain access to any file within your script. Unlike lesser languages though, ARexx doesn't restrict you to a meaningless index number. Instead, you can refer to files using real names such as 'memberlist', 'stock' or any name you wish to use. The use of file pointers may not be particularly obvious if your script only uses a single file, but they're a necessity when more than one file is used. In order for ARexx to know which file you're referring to when you ask it to perform an operation, you need to actually state which file it should use.



Opening and then writing information to a file from ARexx is very simple indeed

And this is exactly what the file pointer is used for.

The next stage is to gain access to a file. Opening it is straightforward; you simply ask ARexx to establish a communications link with a file that is held on disk. Of course, there may be cases where the file doesn't already exist (say, for example, you want the results of an operation on one file saved out to a new file). When this happens, ARexx creates a new file on disk and then establishes the communications link. Be careful though – if you tell ARexx to create a file that already exists, the old file will be deleted.

The ARexx command to open a file is, quite simply, **'open'**. Let's take a quick look at a snippet of code that shows it in action:

```
/* Create a new file */

success = open('myfile', ↵
'RAM:MyNewFile','w')
if success = 0 then
   say 'Unable to open file'
else
   close('myfile')
exit
```

For those of you with even the most basic understanding of ARexx, the above example should seem pretty straightforward. Let's look back and concentrate on the line that calls the **open()** function. As you can see, the **open()** function needs three parameters, the first of which is the name that we wish to use as a file pointer, followed by the filename of the file that we're interested in, and finally, the mode. The mode parameter tells ARexx exactly what we'd like to do to the file once it has been opened. We can either read data from or write data to a file, so ARexx needs to instructed accordingly by the user passing either an 'r' (short for 'read') or a 'w' (short for 'write') to the **open()** function.

APPEND TRICKS

Just to make life a little more complicated, the **open()** function isn't just restricted to these two modes of operation. I won't go into too much detail for the moment, but the more advanced programmers among you may be interested to know that an 'append' mode can also be used by passing an 'a' to the mode parameter. Append mode allows you to write to a file without deleting its existing contents.

One thing worth noting about the example we've just looked at is the check that is performed on the 'success' variable. The value held within this variable is returned by the **open()** function and is used to find out whether the function managed to open the file that we asked for (in the case of our example script, the file was called 'RAM:MyNewFile') successfully. If it contains a value of 1, then everything went to plan. If it contained 0, something went drastically wrong. Checking this variable is very important as you may crash your machine if you attempt to read or write to a file that failed to open. Not only that, but it's also good programming practice.

Finally, note the call to the **close()** function. Whereas the **open()** command establishes the communication link with the file in question, the **close()** function severs this link. Technically, you don't need to close a file once a script has finished doing its stuff (ARexx will automatically close it for you), but it's a good habit to get into. Not all programming languages are as polite as ARexx, so you may discover that files are suddenly inaccessible if they haven't been closed.

> *"The open function isn't just restricted to two modes of operation."*

WRITE ON

Once a file is open, the next step is to use it in some way. File accesses come in two flavours – reads and writes or, for the purists among you,

---

BOOK REVIEW

COOKERY CORNER

ARexx books are still few and far between, but a new publication dedicated to everyone's favourite interprocess communications language has recently been released by US book publishers, Whitestone.

Written by Merril Callaway, *The ARexx Cookbook* (ISBN No. 0-9632773-0-8) has been written, designed and typeset entirely on the Amiga using a variety of different products including *Word Perfect* and *PageStream 2*.

Although the *ARexx Cookbook* is a decidedly low-budget affair boasting no colour (even the cover is black and white), the quality of its content more than compensates for the economical presentation. The book starts by taking you through the fundamentals of ARexx programming, managing to answer a few of the more common questions that beginners ask along the way. It covers in quite some detail the ARexx command set, giving substantial coverage of files, strings, arrays and procedures, all of which are explained in a highly readable tutorial-style form.

One section that I was particularly impressed with was the chapter on debugging ARexx programs, a subject that is often ignored by ARexx book authors. Callaway has done an excellent job of explaining ARexx' Trace facilities in plain English.

The sections devoted to using ARexx to control third party applications is also very good, with

the majority of the examples based around possibly the most commonly automated ARexx-compatible application, ASDG's *Art Department Professional*.

In all, The *ARexx Cookbook* is a great little publication that serves as a worthy alternative to my previous pick of the crop, *Using ARexx on the Amiga* from Abacus.

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The ARexx Cookbook £24.95
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AREXX FOR ALL

This month, Jason Holborn reveals how to teach your ARexx scripts some basic communication skills – reading from and writing to files

input and output. ARexx provides a selection of functions for dealing with both input and output to files. For writing information to files, the two functions we're interested in are called '**writeln()**' and '**writech()**'.

Writeln() is short for 'write line' and is used to write a string of characters to a file complete with a carriage return which marks the end of the line. **Writech()** is pretty similar to **writeln()**, the only difference being that **writech()** doesn't put a carriage return at the end of each line of information that you write to a file. This can be handy when you need to write a continuous stream of characters to a file but **writeln()** makes files look a bit tidier when they are viewed. Here's an example.

```
/* Writeln()↵
demo */

success = ↵
open('myfile'↵
, 'RAM:MyNew↵
File','w')
if success = 0↵
then do
    say 'Unable↵
to open file'
    exit
    end
do for 10
    writeln('↵
myfile','Amiga Shopper')
    end
exit
```

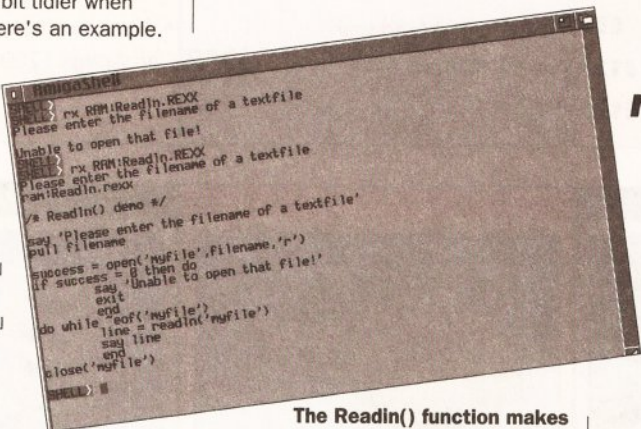
As you can see, it starts in the same way as our first demo script by opening a file on the RAM disk called 'MyNewFile' using a filepointer called 'myfile'. The result of the attempted file open is then checked and if ARexx managed to open the file successfully , the script then enters a loop that writes the string 'Amiga Shopper' to our file ten times. Type it in, run it using the 'RX' command and then view the results by typing the following AmigaDOS command at the Shell prompt.

```
1.> Type RAM:MyNewFile
```

If all went well, the file should contain ten copies of the string 'Amiga Shopper'. Now that we have a script that creates a file and writes to it, we need to be able to read the whole lot back in again.

READ BED

Reading information from a file is just as easy as writing information. Indeed, the functions used to read from a file are very similar to their file writing counterparts in both their format and how they operate. ARexx provides two functions for simple sequential file access – **readln()** and **readch()**. Just like **writeln()** and **writech()**, these two functions read a line of characters or a specified number of characters into a variable which you define. If a single line of data within a file contains several discrete data items, it's up to you to split the string manually using the string functions that we covered in last month's tutorial. The format of the **readln()** function is '**variable = readln(filepointer)**'.



The Readln() function makes programming alternatives to standard AmigaDOS commands a doddle. Here's our version of the AmigaDOS 'Type' command!

Let's take a look at a demo of **readln()** in action:

```
/* Readln() demo */

say 'Please enter the ↵
filename of a textfile'
pull filename

success = ↵
open('myfile',filename,'r')
if success = 0 then do
    say 'Unable to open that ↵
file!'
    exit
    end
 do while ~eof('myfile')
line = readln('myfile')
say line
end
close('myfile')
```

> **"Writech() doesn't put a carriage return at the end of each line"**

Readch() is slightly different to its **writech()** equivalent. Because **writech()** simply tacks information on to a continuous stream of data within a file, **readch()** needs to be told exactly how many characters it should read. The format of the **readch()** function is as follows: **variable = readch(filepointer,number of characters).**

With these two parameters, **readch()** will pass the next x number of characters into the variable defined at the beginning of the line. Here's an example that reads an entire file a character at a time and displays each character on screen.

```
/* Readch() demo */

say 'Please enter filename ↵
of textfile'
pull filename

success = ↵
open('myfile',filename,'r')
if success = 0 then do
    say 'Unable to open that.↵
file!'
    exit
    end
do while ~eof('myfile')
    char = readch('myfile',1)
    say char
endclose('myfile')
```

Note the **eof()** function that is used to terminate the loop when all the characters have been read from the file (the '~' bit means NOT, so the line should actually be read as 'while not end of file'). This is a very important function as our scripts will rarely know the exact number of characters within a file. What it does is to check the status of the file; if the last character from the file has been read, a value of 1 is returned. If there are characters left to be read a value of 0 is returned. AS

● **You will find the programs in this article in the Source_Code/ARexx directory of the cover disk.**

NEXT MONTH
I'll be taking a look at random access files

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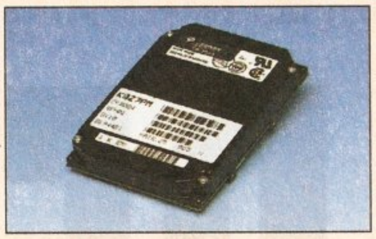
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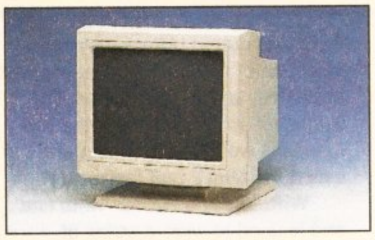
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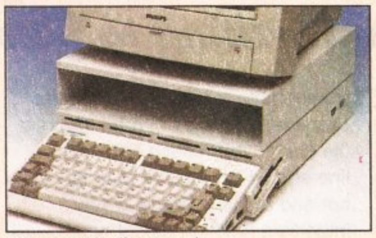
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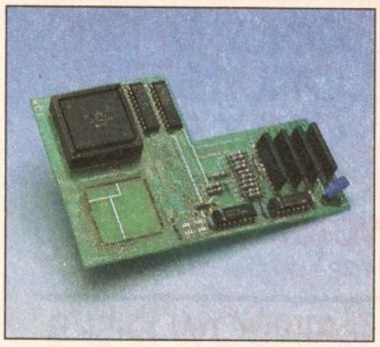
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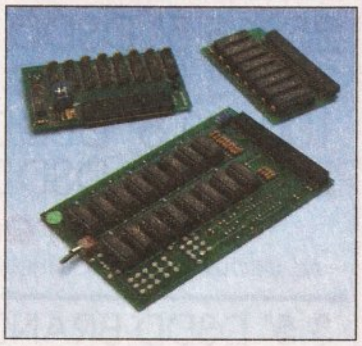
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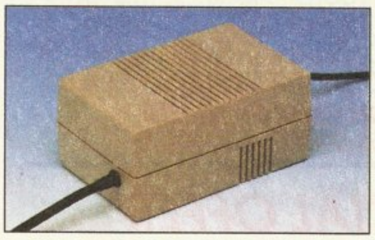
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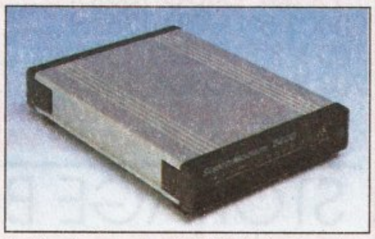
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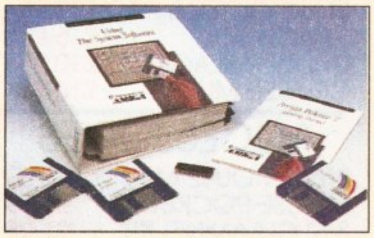
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This month we're moving on to learn about controlled looping, simple functions and structures. And just to make sure that your new-found skills aren't wasted, we're going to put them to work immediately to help you write a useful application – introduced towards the end of this month's article.

The 'for' statement is an excellent way of handling loops. Readers familiar with the wonders of BASIC might recognise it, and in fact, the **for** statement in C does pretty much the same thing as the equivalent in BASIC. Let's look at a brief example:

```
#include <stdio.h>

void main(void)
{
   int loop;

   for (loop = 1; loop <13; ↵
 loop++)
     {printf("%d x 12 = ↵
 %d\n", loop, loop*12);
     }
}
```

THE 'GOTO' STATEMENT

Perhaps the most famous bad programming technique in the known universe, the GOTO statement in BASIC has deservedly attracted bad publicity. It encouraged abysmal program structure and the creation of the first "spaghetti" applications – programs that were so complex and hard to understand that they became impossible to either de-bug or maintain. The need for a statement that allows you to jump to a fixed place in your program is non-existent. I've purposely separated the description of this command, which is present in C, because I won't be documenting it. To quote briefly from the book written by the inventors of C itself: "C provides the infinitely abusable **goto** statement... It is easy to write code without it. We have not used it in this book."

SO WHERE'S THE KITEMARK?

ANSI, the American National Standards Insitute, is responsible for the setting of standards, much like the British equivalent responsible for the kitemarks on many reputable products. The British Standards Institute, however, hasn't (yet) turned its attention to programming languages, but one of the many diverse things that ANSI has put a standard to is C. This is a good thing for developers in general, because this means there is now a set standard to determine how a C compiler works. This should mean that the source code that you see in *Amiga Shopper* will work on all C compilers in the world.

Unfortunately for the beginner it's not quite as simple as this. A lot of compilers are old enough not to be fully ANSI compatible, or they simply don't implement the ANSI standard in full. Modern C compilers such as the SAS C 6.2 are ANSI compatible, though.

This example prints the 12 times table on the screen. The **for** statement works like this:

```
for (<starting condition>;
<loop whilst this bit is
true>; <do this every loop>)
{statements in loop....;}.
```

If the bit you're running in the loop is just one instruction, as it is in the times table example above, then strictly speaking you don't need the { } brackets to hold them. It's good practice to put them in, though, because not only does it look neater, but it's easier to read and to de-bug (if need be).

No guide to C would be complete if it did not discuss the **do-while** looping method also. In all my years of C programming, I can safely say that until now I'd never used it. To be totally correct, I'd never found a use for it. It works rather like the **while** loop, except instead of saying **"While <this>, do <this>"**, it's the other way around:

```
   do
        {statements...}
   while (<loop whilst this ↵
 condition is true>);
```

FUNCTIONS

As we'll find out when we start design work on our special *Amiga Shopper* application, a necessary part of any program is proper structure. One of the things we do to help this is to divide our program up into small functional blocks that perform specific tasks. We've talked about functions in C before; this month it's just a question of revision, and learning some techniques for using those functions. Here's a small functional block to look at:

```
void ShowName(void)
{
   printf("Toby\n");
}
```

This very simple function prints my name every time it is called. It is called by quoting its name:

```
ShowName();
```

It acts like any normal statement, and can be used as such. All programs have a 'main' function, which is called automatically when you run your program.

In order to help the C compiler to find potential faults in your programs, you have to tell it how your function is called. This way, if at any time in your program you should misuse it, then it is able to warn you. This is called 'prototyping', and it's one of the facilities that came about with ANSI C. A function prototype appears at the top of your program, and is usually one line which simply shows the function name, what it returns (if anything) and what parameters it takes. The prototype for our **ShowName** function looks like this:

```
void ShowName(void);
```

The voids are simply nulls, or nothings. This tells the compiler that our function returns nothing, and has no parameters. If we were to call it wrongly, like this:

```
counter = ShowName("toby", ↵
 23);
```

– then the compiler could spot the error and tell us.

The best functions are those that are as generalised as possible. This way, they can be re-used continually throughout the program, and maybe even in other programs in the future. Try and keep this in mind when writing your code.

Let's leave functions for a while and move on to an example of how a well-structured game of space invaders might look. Don't go typing this in, because I've not done any of the functions. But if you want to do them yourself, then go ahead!

```
void main(void)
{
   int lives;
   BOOL continue;
   long score;
   continue = TRUE;

   while (continue)
   {
    lives = 3;
    while (lives != 0)
    {
        score = PlayGame();
        continue = ↵
 SetHighScore(score);
        lives = lives - 1;
    }
   }
}
```

There's nothing there that we have not already dealt with, with the exception of the BOOL variable type. A BOOL variable can only hold two values, TRUE (–1) or FALSE (0). You will note that the program above is pretty much self-explanatory, even without any comments. It is absolutely vital that you structure and organise your programs neatly. De-bugging large C programs that mysteriously crash after five minutes is a nightmare if your program is in a mess to begin with.

> **"It is absolutely vital to structure and organise programs neatly."**

STRUCTURES

One of the things that never quite made it into BASIC is the ability to group relevant variables together and refer to them globally under one name. This is a great aid to efficient programming, so let's dive straight in at the deep end with an example. In this program, we'll be keeping names and addresses. From what we already know, this is how we'd tackle storing all of the information:

```
char names[25][10];
char address_line1[40][10];
char address_line2[40][10];
```

– and so on, using arrays.

USING YOUR

Now you've got your includes (see 'Include files' above), where on earth do you put them? Quite simple. In your NorthC drawer, there is a sub-drawer called 'include'. In this drawer you'll notice files like 'stdio.h'. If your Commodore-supplied includes are present on a disk called, say MyDisk, typing the following will install them:

```
cd northc:include
copy MyDisk:include/#? "" all
```

Each part that makes up a full name and address is called a **field.** An example is the name field, and you could also have perhaps a phone number field. A full name and address is called a **record.** A collection of records together is called a **file.** Think of it as a filing cabinet: the file is the drawer, the record is the individual folder with a person's information in it, and a field is a single line of text in the folder. In C, and most high-level languages, we can group all our fields together and give them a global name, such as 'address'. In C, we would do this to define our name and address:

```
struct address {
    char name[40];
    char address_1[40];
    char address_2[40];
    char post_code[15];
    char phone_number[25];
    };
```

This defines the structure 'address', with five fields in it, and all arrays of characters (strings). If we wanted to have 100 names and addresses, we might do this after our structural definition:

```
#define NUMBER_OF_ADDRS 100

struct address my_addresses.↵
 [NUMBER_OF_ADDRS];
```

Having set up our structure like this, we can access the individual elements simply by referring to the structure name, which one we're talking about, and the field name. For example, to print the 50th person's post code:

```
printf("Post code is %s\n", ↵
 address[50].post_code);
```

The word after the '.' is the field name. We could print everyone's phone numbers and names in a neatly organised list with a program like this:

```
for (loop = 0; loop ↵
 <NUMBER_OF_ADDRS; loop++)
{
    printf("%s\t\t%s\n", ↵
 address[loop].name, address.↵
 [loop].phone_number);
}
```

The \ts in the quotes are tabs. These ensure that there is a uniform gap between the names and the phone numbers. As you can see, we can already generate some quite handy routines.

INCLUDE FILES

The 'include' files are always a matter of great confusion. Well, to put it simply, without them you can't write C programs, so you're definitely going to need them.

> "Without 'include' files you can't write C programs, but they'll cost you."

The Amiga's operating system is very complex, and is full of structures and **#defines** like the ones we have used this month. All of these have to be defined somewhere, because you wouldn't want to type them in every time. This is done in the include files. The include files also define all of the prototypes for the functions such as **printf**, which we use to show things on the screen. If you need to get hold of them, include files will cost you, but you might already have them without realising it. If you've bought a compiler, such as the SAS C 6 compiler, then you have the complete include files. If you got your your compiler from the public domain, then it is unlikely that you have these files – check in the documentation to be sure. If you don't have them, then you will need to order them from Commodore. Write to:

Sharon McGuffie
Commodore Business Machines (UK)
Commodore House
The Switchback
Gardener Rd
Maidenhead
Berks SL6 7XA

Send a cheque for £25 made payable to Commodore Business Machines (UK) Ltd and ask for the latest Native Developer's Toolkit. You might like to enquire about becoming a registered developer as well.

Finally, to discover where to place these files when you have got them, read the documentation. This depends on which particular compiler you happen to be using.

OUR LITTLE TOY

For the following few instalments of the C programming tutorial, we'll be learning as we create. Next month we'll be discussing the specification of the address book program we began here, and designing the way it will look. This will build up over the next few months to give you a working Amiga application which you can continue to update and improve over time. In the meanwhile, if you want to get ahead, try setting up a simple address system using the structures described this month, and use **scanfs** to input the data. Have fun! AS

Toby Simpson is available on CIX: toby@cix.compulink.co.uk

SAILING THROUGH C

Toby Simpson shows you how to keep your loops under control and create a useful application in the process

Note: the symbol ↵ in listings means *do not* type a return – the line is simply too long for our narrow columns

JARGON BUSTING • JARGON BUSTING • JARGON BUSTING

BASIC – Beginners' All-purpose Symbolic Instruction Code. The acronym for this language was probably devised before the five words it represents were applied. BASIC was designed in the late '60s as a teaching language. It was never intended to achieve the popularity that it did. Most dialects of BASIC are slow, and are considered to teach bad programming practice. BASIC's massive popularity in the '80s is giving way to other languages, such as Modula II, and C in this decade. BASIC does, however, still survive on the Amiga in the form of HiSoft's BASIC and AMOS.

C – A compiled language designed primarily for systems programming. It was used to write much of the Amiga's operating system and many Amiga applications.

COMPILER – A compiler is a program that turns human-written program code into binary instructions for the microprocessor inside your computer to run. In the case of C, the compiler turns the text you write in a text editor into 68000 machine code for the Amiga. This is different from an interpreter, which runs a program as it goes along and never produces a program the Amiga can run.

'INCLUDES' WITH NORTHC

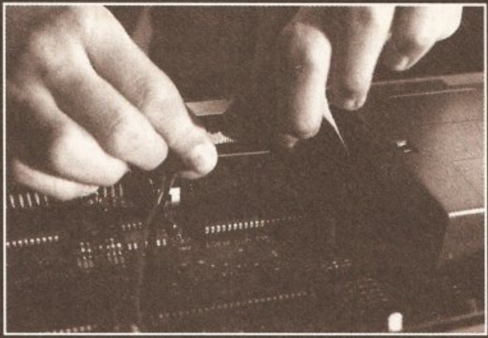
Obviously, you will need to substitute 'MyDisk:' with the name of the disk on which your include files are located.

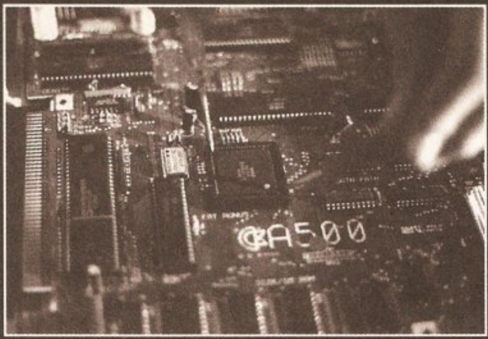
The NorthC setup utility sets an environment variable called 'include' which points to this drawer. You'll know if you've got this right: if you type **dir northc:include** you should get a list of directories with names like 'exec', 'dos' and so forth.

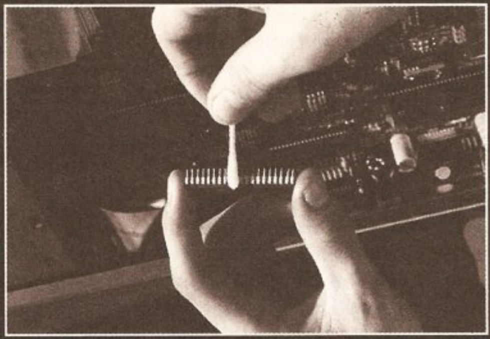
You will also need to install **amiga.lib,** which is supplied with the Commodore includes, and goes in 'northc:lib':

```
cd northc:lib
copy MyDisk:lib/amiga.lib ↵
 "" all
```

All should then work fine! Next month we'll discuss setting up your development environment in preparation for our application.







GIVE YOUR AMIGA A SPRING CLEAN

The hard drive's ribbon cable terminates in an edge connector next to the floppy power supply pins on the motherboard. Removing the connector requires quite firm pressure. Ensure you grasp the connector itself, not the ribbon cable. When replacing, it's easy to overlook the pins completely or bend one accidentally. Take your time and look out for the small capacitor to the right-hand end.

This is the Agnus connector, and you must exercise extreme care removing her from the board. She is rather fragile, and her bottom can easily fracture. The best way is to put an electrical screwdriver in each of the diagonally-opposite slots, and apply gentle alternating pressure between each one. Eventually, out she will pop. Put some kind of registration mark on the chip to ensure that you put it back the correct way.

Cleaning the legs of all the ICs will ensure there is good contact between the IC and its holder. Heat, dust, coffee, cigarette ash, cobwebs and moisture all contribute towards the build-up of oxidation and erosive grime. Observe the correct anti-static procedures throughout the process. You could emulate industrial practice by attaching an earth cable from your ankle or wrist to a suitable earth such as a cold water pipe. But don't forget it after!

Last month we took a close look at handling internal repairs on your Amiga. To continue our investigation of post-initialisation faults, we turn our attention to floppy drives.

FLOPPY FAILURE

We saw last month how many problems are down to failure of the 8520 CIA chips – the Complex Interface Adaptors that handle the parallel port connector, joystick and mouse connectors, front panel LEDs, keyboard, and a great deal more. These also have a responsibility in the handling of the floppy drive, so it is advisable to check the 8520s when there is no response from a floppy. However, a floppy drive itself can go down. First, though, there are several checks that can be carried out before removal and replacement becomes necessary.

With the Amiga power off, follow the four power lead cables from the motherboard to the floppy drive. These are coloured – two black, one red and one brown. At the drive end, there is a black push-on connector which must be removed. Grasp it between two fingers, and apply firm, left to right pressure, drawing it gradually away from the drive.

Next, you will see a broad grey ribbon cable, which is plugged into the motherboard, just to the right of the power lead. Grasp the connector with a hand at each end, and gently pull it away from the pins. Take care to pull it vertically, so that you do not bend the pins. Make sure you do not pull it by the ribbon; these connectors are easily broken, and are difficult to put back together.

Four screws hold the drive in place. One is situated towards the front of the drive, and is easily visible from the front of the Amiga once it has been opened. The other three are not so obvious, and are accessed from underneath the Amiga. Two are in a line directly behind joystick 1 port. The other is sunk into the case just to the rear of the rubber foot.

NEW DRIVE FOR OLD

Using a small screwdriver, remove the four screws, and lift the drive clear of the Amiga.

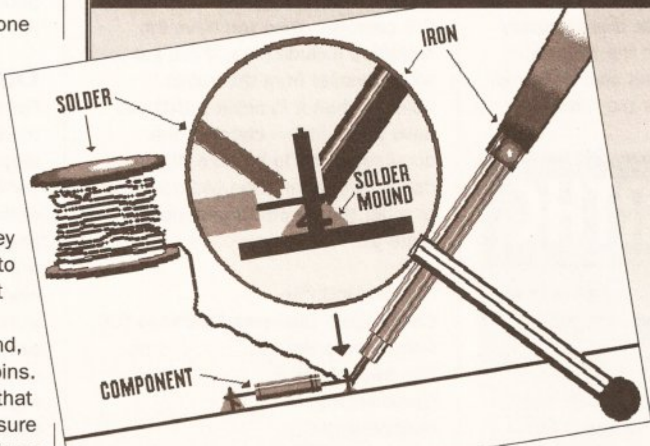
There is only one way to find out if your drive is faulty, and that involves trying it in another machine. Apart from checking the power cable connectors for continuity, and trying out someone else's ribbon cable, there is nothing more that could represent a temporary problem with the drive. Unfortunately, it is pretty clear cut – either it works or it doesn't, and if you find that the drive is faulty, then you are going to have to purchase a new one. If this does happen, there is some consolation in the fact that you will be able to fit it yourself, following the procedures described here in reverse – and you'll save money into the bargain.

However, two small words of caution. Be careful when reconnecting the ribbon connector to the motherboard. First, ensure that you cover the pins correctly as you offer the connector up to the motherboard – it is very easy to bend or even overlook them. Second, take care not to trap one of the small capacitors under the connector; as you apply the necessary pressure to push it home, you can inadvertently snap it off.

SUPERFICIALLY EASIER

The reason why Commodore has risked a one-year on-site maintenance contract with the Amiga 600 is because it uses 'surface-mounted technology'. This means that instead of the ICs being mounted in removable sockets, they are soldered permanently on to the motherboard. Although this enhances the reliability of your machine, it does mean that DIY upgrades are virtually impossible, even for the most ambitious of users. If you have replaceable ICs, you should be aware that contact between the pins of the IC and the holder can become contaminated by

SOLDERING ON – A GUIDE...

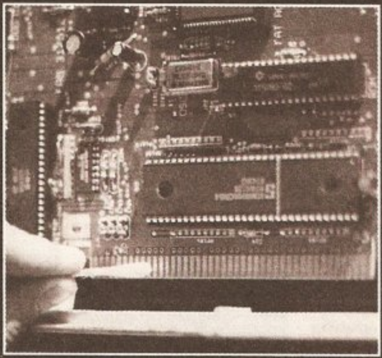


Soldering is a fiddly process, and you can often make mistakes if you aren't sure how to go about it. Read our 10-point guide to successful soldering to avoid disaster

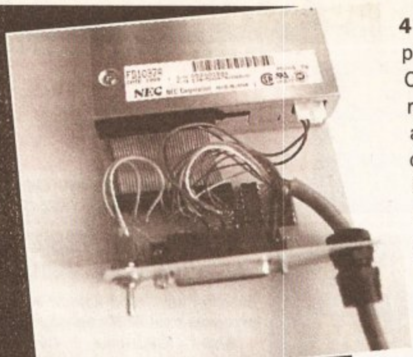
1 If there is existing solder, remove it using a de-soldering tool or braid.
2 Do not use too powerful a soldering iron for fine components. You will only succeed in doing more damage. Use a soldering iron holder, not the edge of the bench. Remember, soldering irons get very hot.
3 Use proper multi-core solder with in-built flux.
4 Apply the iron first, and allow the surface to heat up.
5 When any remaining solder begins to melt, or after an appropriate time, add more solder to create a mound around the item as shown in the diagram.
6 Let the solder cool before tugging to see if it has held.
7 Only use enough solder to hold the component. Don't leave huge blobs, which could contaminate a nearby component.
8 Snip off any extending wire from the soldered joint to prevent short circuits.
9 Inspect the area around the repair to ensure no blobs have fallen off the iron on to adjacent circuitry.
10 Leave the soldering iron to cool down in a safe place before putting it away.

WORK SHOPPER WORKSHOP

The third part of Wilf Rees' series on Amiga repairs continues with a look at floppy drives, power leads and routine overhauls



Take advantage of having the Amiga innards exposed, and give the expansion buses a good clean with isopropyl alcohol. If you are feeling particularly conscientious, cleaning the various pins on the floppy drive power connector and the ribbon cable connector will also be beneficial, but be very careful not to bend them.



A common fault with drives is in the cable. Do a continuity test along each of the thin cables. Strip the cable back at the drive end, check again to ensure the break has been eliminated, and de-solder, then re-solder each wire to the correct pin. The switch also causes problems – test it with a circuit tester.

surface erosion or oxidation, and the next procedure involves checking that this has not occurred.

GREASY CHIPS

This task is more of a maintenance procedure than a total repair solution, but on many occasions it has solved the problem when replacement of the entire mother-board seemed to be the only hope.

Before you start, you'll need last month's article to hand. (If you need to order a back issue, see page 95.) Remove the keyboard as shown. Working your way through the ICs one at a time, remove them following the method described in *AS* 23. Remember to follow the anti-static procedures at all times.

The Agnus Chip needs special attention. Removal of this particular IC is tricky, and needs to be done as follows.

The first step is to register the orientation of the IC. You can do this using a marker – a small section of disk label will do the job perfectly adequately. Trim it down with scissors, and apply it any way you like, so long as you can remember which way it went. You'll see why this needs to be done later.

Looking at the motherboard from the front of the Amiga, you will see the Agnus holder, centre left. The Agnus is the only 'square' shaped IC used in the Amiga. The holder has two slots, top left hand corner and lower right. To remove the Agnus you'll need two fine electrical screwdrivers. Insert them carefully into the slots and gently lever them backwards. Be very cautious at this stage. Too much initial force can sometimes break the IC holder, which would involve a very expensive repair; too little force, and nothing happens. If you can feel one corner of the Agnus begin to move, transfer the pressure to the opposite corner and ease it forward as well. Little by little, the IC will become free. The need for caution here cannot be over-stressed.

> ***"The only way to test a floppy drive is to try it in another machine."***

ADD THE ALCOHOL

Once you have removed an IC, It will require cleaning with isopropyl alcohol. This is quite a delicate task, and needs to be done with great care. Here's a step by step guide.

1 Hold the IC between thumb and middle finger, with the pins pointing downwards.

2 Take a cotton bud, and dip the tip into isopropyl alcohol.

3 Using a downward stroking motion, wipe the outside surface of all of the pins facing you, and the inside surface of the pins furthest away. Repeat this wiping procedure several times to ensure thorough cleansing.

4 Turn the IC around and repeat the procedure on the opposite side. Once this process is completed, replace the IC in the correct socket, according to the procedure described in *AS* 23. Ensure you have the IC orientated correctly, with the notch on the IC corresponding to the indicator on the motherboard. While you're at it, take advantage of the circumstances, and apply the same cleaning process to the two edge connectors (top and bottom).

Once all the contacts are clean and the ICs are replaced, reconnect the keyboard and switch on.

EXTERNAL FLOPPIES

The most common fault in an external drive is cable problems. If your drive is not functioning, follow these procedures.

1 Examine the drive port on the Amiga to see if any of the pins are bent or snapped off.

2 Remove the bolts which hold the cover in place, starting with the 23-way plug which goes into the Amiga. Examine each of the cables closely to check that they are still firmly soldered to the socket. The most common culprit is the earth lead, which is usually soldered to the socket case itself. Often, during manufacture, insufficient heat is applied to the socket case, resulting in poor solder adhesion. The earth lead can break away if continual strain is put on the cable. If it is still firm, examine the other cables to see if they are intact. If one has broken, identify the culprit by checking for solder deposits. To make doubly sure, offer the cable to the pin to check the match. Once confirmed, re-solder carefully.

3 If this still proves unsuccessful, remove the self-tapping screws which hold the case lid in place (there are usually four), and remove the cover of the drive. You will be able to see the drive end of the cable, and the particular configuration of your drive.

There are several permutations of drive: some have through ports for daisy-chaining, some have on-off switches, some have in-built copying devices, and some have mixed versions of all of these. Whatever type you own, check each cable (from the pin at the Amiga end, to the small circuit board at the drive end) with your circuit tester *(AS* 23) to ensure continuity.

Next, check the switch to find out if it is working. To do this, place the circuit tester on two of the poles, and switch the drive on and off.

4 Inspect the ribbon cable connecting the circuit board to the drive. Ensure it is firmly home. Check that the pins are clean. Substitute the ribbon cable from the internal floppy to eradicate cable fault.

5 Check out the power cable to the drive. Is there continuity along the cables? Are both ends firmly pressed home?

6 Examine the circuit-board for dry joints, or loose solderings.

If all of these fault tests prove negative, then unfortunately you simply need a new drive. AS

NEXT MONTH

In the final part of our series on repairs, we'll look at how best to approach and tackle fault identification and repair. We'll also take a look at diagnostic software, and round the series off with a technical addendum to provide you with any of the specifications you need to check up on. Happy soldering, and see you next month.

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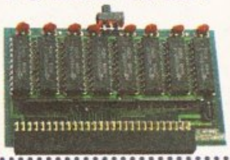
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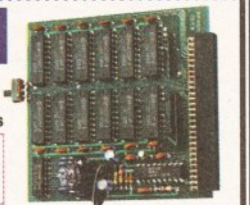
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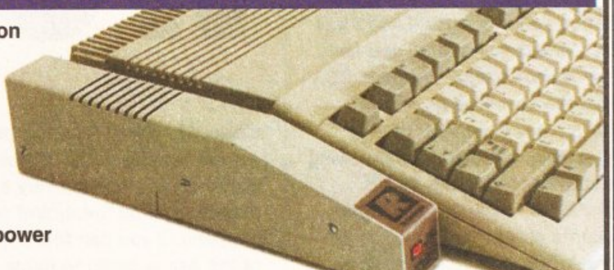
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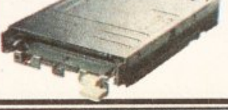
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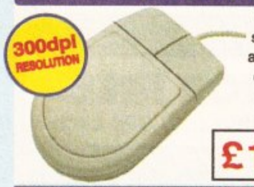
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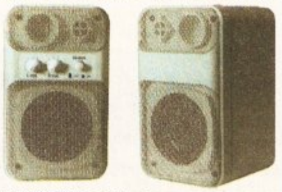
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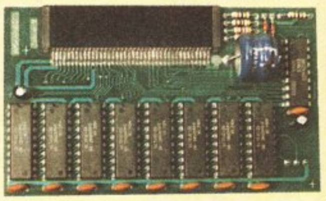
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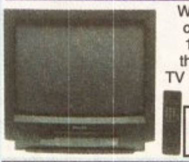


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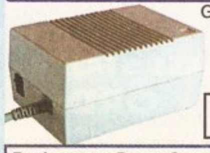
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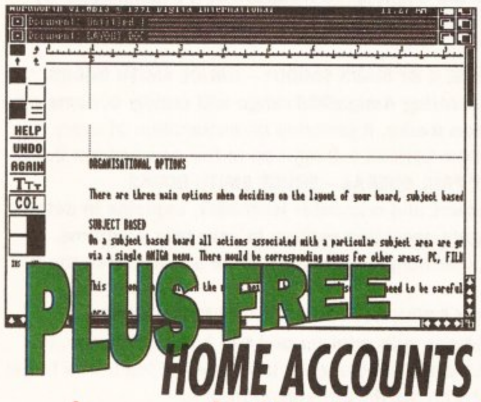
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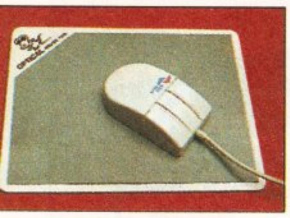
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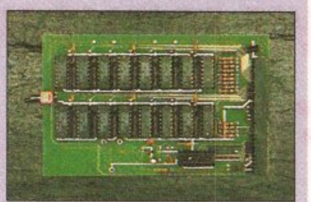
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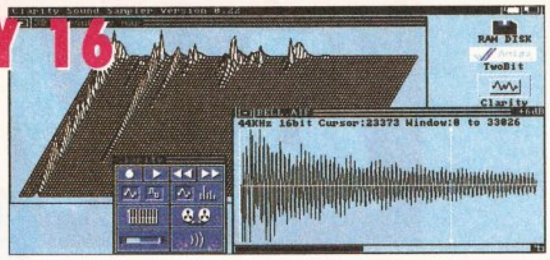
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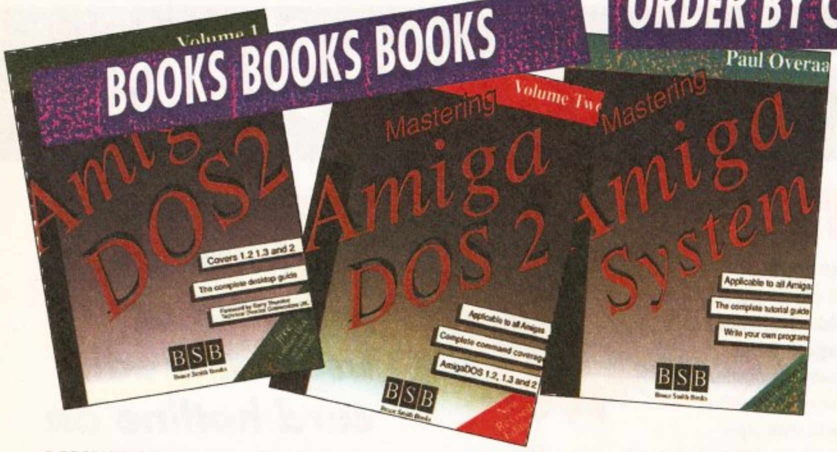


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MASTERING AMIGA SYSTEM BY PAUL OVERAA – BRUCE SMITH BOOKS
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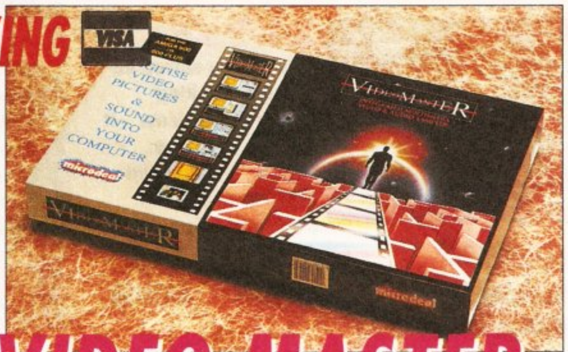
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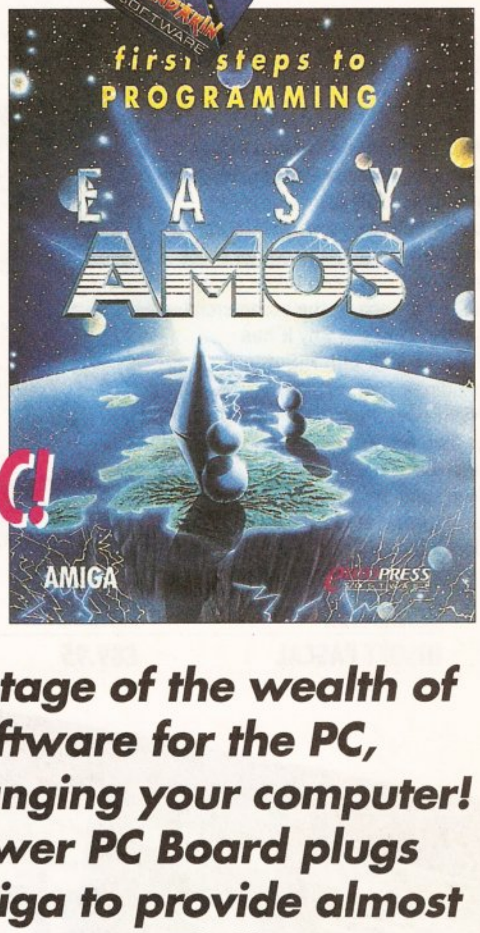


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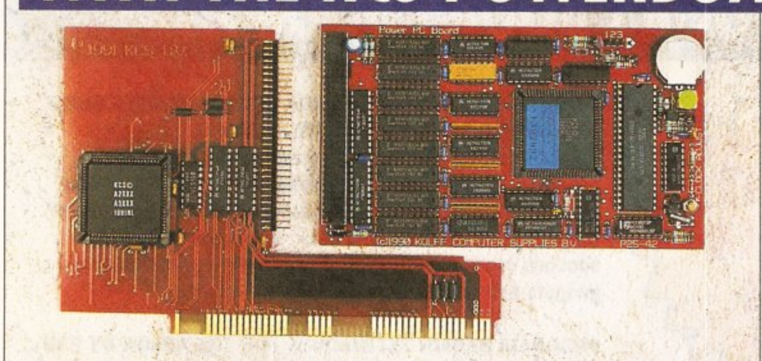
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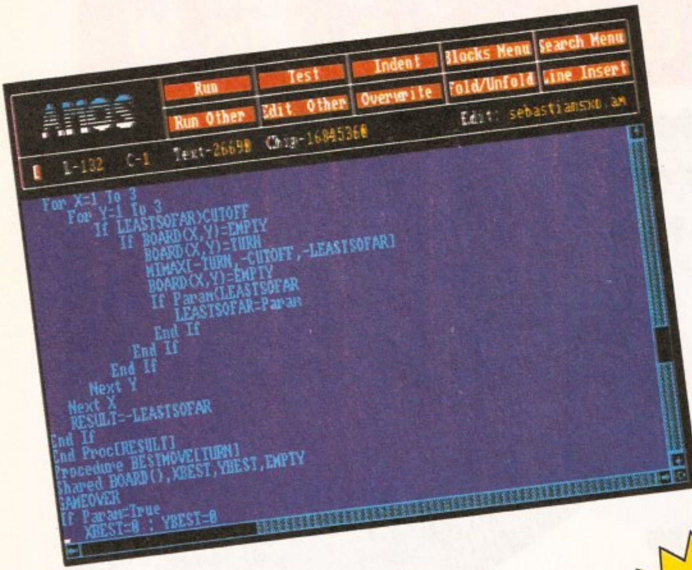
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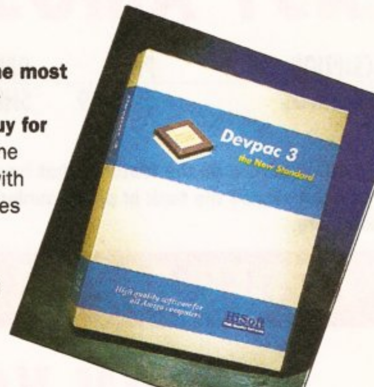


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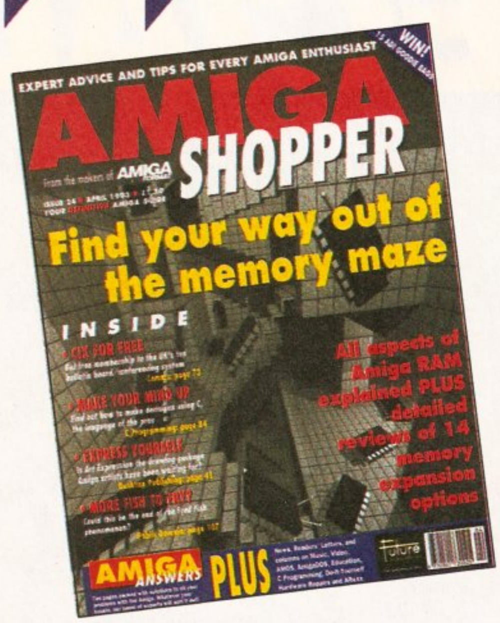
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Use of Intuition, the Amiga's graphical interface, is essential for giving your programs that professional look and maintaining compatibility across different versions of the operating system. This book shows you how, with sections on screens and windows, communications, menus, gadgets and requesters.

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APDEG (Amiga Public Domain Exchange Group) Laser printing service, free PD, Advice service, util disks for members, PD swaps. Contact Richard Brown, APDEG, 18 High Street, Mundesley, Norfolk NR11 8AE ☎ 0263 720868. Membership fee £6 a year.

Artman News, views, reviews, free PD for your articles. Free membership. Send blank disk + SAE for free disk mag and 2 free games to A Greenwood, 40 Northwell Gate, Otley, West Yorks LS21 2DN ☎ 0943 466476

Asia Amiga Association Newsletter, PD, information, advice, ideas, exchanges. Membership HK$250 per annum. For more info contact Pete Alex, Room 11c, Fortune Court, 4–6 Tak Hing St, Kowloon, Hong Kong. ☎ 7245196

Astro PD Send SAE and blank disk for catalogue. Help and advice also available. Contact D Benson, 3 Skiddaw Court, Nunthorpe, Middlesbrough, Cleveland TS7 0RD

AUGFL vzw bi-monthly newsletter, PD, distribution and support of Belgian programs, registration-site, tips. 750 Bfr/year membership. Contact Lieven Lema, Meesberg 13, 3220 Holsbeek, Belgium

Avon Micro Computer Serious Club The first Sunday night of each month 1900-2200, members 50p guests £1. Centre for the deaf, 16-18 King Square, Bristol BS2 8JL Fax: 0272 311642

Basic Programmers' Group 68 Queen Elizabeth Dr, Normanton, West Yorks WF6 1JF. Encourages the use of Basic, exchanges ideas and assists beginners to the language. Free newsletter Mark Blackall ☎ 0924 892106

Beaconsfield and District CC Contact Philip Lishman ☎ 0494 782298 27 Russell Court, Chesham, Bucks. Meetings at St Michaels Hall, St Michaels Green, Beaconsfield 7.45 – 9.45pm. Programming, gaming swapping PD, having fun. Membership £10 for 6 months

Bible Bureau online scripture output and informal bible study. Quarterly meetings, membership £5 quarterly. Contact A.D., 24 Brodie House, 10 Harcourt Avenue, Wallington, Surrey SM6 8AR ☎ 081 669 7485

Bloomfield Video and Computing Beginners, video techniques. Meetings at Bloomfield Community Centre, Narberth, 7.30pm alternate Tuesdays. Membership £5. Contact Mrs Beryl Hughes, Nashville, 50 Glynderi, Carmarthen, Dyfed SA31 2EX ☎ 0267 237522

Bournemouth Amiga Club Problems, fun, social beginners welcome. Free. Contact P Chamberlain, 36 Homeoaks, 30 Wimborne Road, Bournemouth, Dorset BH2 6QA ☎ 0202 296714

BR & CJ Computer Club B Robinson at 23 Fairway Rd, Shepshed, Loughborough, Leicestershire, LE12 9DS ☎ 0392 72889 or 03922 841296. Regular disk mag packed with tips, reviews of games and serious software, game cheats database, demos and utils, very large PD library. Membership fee £1.25

Bus Stop PD from 40 to 75p per disk, cheats, classifieds and gossip, plus competition every 2 weeks. Send SAE and 50p for catalogue. Lisa Tyree, 5 Westbourne Rd, Marsh, Huddersfield HD1 4LQ

Cacophony (Unlimited) Aims to create quality PD with AMOS and others. Help given. Mark Wickson, 49 Perrott Close, North Leigh, Witney, Oxon OX8 6RU

Camberley User Group Lectures, competitions, advice, meetings, free membership. For more info contact F Wellbelove ☎ 0252 871 545

Champion PD Club PD at 30p, newsletters, advice, help and more. Membership £10. Contact Steve Pickett, 31 Somerset Close, Catterick, N Yorkshire, DL9 3HE

Cheapo PD Club Non-profit making postal PD, newsletters, advice. Membership £5. Contact Jason Meachen, Ivy Cottage, Chapel Road, Beaumont, Clacton, Essex CO16 0AR

Chester-le-Street 16-Bit Computer Club Ground floor function suite, The Civic Centre, Newcastle Rd, Chester-le-Street. Meets Mondays from 7.30-9.30pm. Exchange advice and swap tips. ☎ Peter Mears 091 385 2939

CDTV Users Club Technical support, news, compiling compatible software list. Free membership – just send SAE. Contact Julian Lavanini, 113 Fouracres Rd, Newall Green, Manchester M23 8ES

Chic Computer Club Full details with an SAE to STAMP, Chic Computer Club, PO Box 121, Gerrards Cross, Bucks. For info contact Steve Winter ☎ 0753 884473

CHUD Free membership. Send SAE for details to Mr M Sellars, 103 Newward Rd, Bulford, Salisbury, Wilts, SP4 9AH ☎ 0980 33154

Club 68000 Competitions, programming, music. Meets Harrogate Leisure Centre, Mondays 6.15pm-10pm. SAE to Chris Hughes, 59 Walton Park, Pannal, Harrogate, N Yorks, HG3 1EJ ☎ 0423 891910

Club Amiga £10 a year for PD and a 24-hr helpline (091 385 2627). For more info send SAE to Chris Longley, 5 Bowes Lea, Shiney Row, Houghton Le Spring, Tyne and Wear

Club Futura Advice to programmers and beginners. Send SAE for info to G Holland, 16 Hermiston, Monkseaton, Whitley Bay, Tyne & Wear NE25 9AN

Comp-U-Pal Australian group for users in the outback. Newsletter, helpline, PD library. Membership A$24. Comp-U-Pal, 116 Macarthur Street, Sale, Victoria 3850, Australia

GET YOURSELF LISTED

If you run a user group which isn't listed on this page, fill in the form below for your free entry. Send it to *Amiga Shopper* User Groups List, 30 Monmouth Street, Bath BA1 2BW. We reserve the right to refuse entries.

AS25

Group name ....

Contact name ....

Contact telephone number ....

Contact address ....

....

....

Place of meetings ....

Time of meetings ....

Type of activities ....

....

Membership fee ....

Computeque Steve Lalley at Inskip Meeting Hall, Ashurst, Skelmersdale, Lancs on 0695 31378 7.45pm – 10.30 pm every Tuesday. From beginner to advanced user. Half year membership £2.50 children, £3 adults

Computer Club 16 Laton Rd, Hastings, East Sussex ☎ 0424 421480. A 16-bit club dedicated to being computer enthusiasts Membership costs £15 per year

Chris's PD Great value public domain compilations. Send SAE for list. Contact Chris Coaite, 22 Merryfields Avenue, Hockley, Essex SS5 5AL.

Darlington Commodore Users Club News, discounts, cheap PD, advice, newsletter and more. Annual membership £5. For further info contact S Wheatley, 1 Ruby St, Darlington, County Durham DL3 0EN

Deluxe Cheats Disk User Group Steven Frew at 96 Campden Green, Solihull, West Midlands, B92 8HG. Software advice. Updates every 2 months! £4 for disk £2 for updates

East Midlands Amiga User Group Help. advice, tutorials. Meet Wollaton Grange Comm Centre, Wednesdays 7–10pm. Contact Richard Haythorn, 70 Felstead Road, Apsley, Nottingham NG8 3HF ☎ 0602 298075 / 873380. Membership fee £5.

Edinburgh Amiga Group Membership £5, includes free advice and PD. Contact Neil McRea, 37 Kingsknowe Road North, Edinburgh EH14 2DE with SAE

Enfield Amiga club For info contact Sean Clifton ☎ 081 8042867 32a Hoe Lane, Enfield, Middx Meet, swap, competitions, helping new users

Enterprise PD 'Free' PD if you supply disks and postage. Membership £25 per year, £5 per month. T McLoughlin, 229 Barking Road, East Ham, London E6 1LB ☎ 081 472 0434

Eureka PD Small library with friendly service. 70p per disk. Contact Liam Allen, 5 Hartwell Close, Northampton NN2 8TT

Exeter 16 Bit User Group Andrew Deeley or Phil Treby at 25A Gloucestershire Rd, Exwick, Exeter, EX4 2EF. Meeting every Wednesday 7pm. Programming £6 per annum

Free PD Club Send disk + SAE for more info to Adrian Porter, 237 Prince of Wales Rd, Manor, Sheffield S2 1FG. Free membership

FST Amiga Club Bi-monthly newsletter, all types of activities. For £15 membership you receive one free commercial game + one PD disk + 11 further PD disks, one per month. Contact Tel or John, 17 Grasmere Close, Penistone, Sheffield, Yorks S30 6HP.

Fylde Computer Club All aspects of computing. Meets 7pm, Lostock Gardens Community Centre, 2nd and 4th Wednesday of month. £15 per year, 50p on door. Contact Colin Biss, 90 The Esplanade, Fleetwood, Lancs FY7 7BQ ☎ 0253 772502

Galactik PD Swaps and sells PD. Contact E Newsome, 10 Crugan Ave, Kinmel Bay, Clwyd LL18 5DG. Demos, music, utilities, games, 99p for catalogue disk

Game Swap Club Swap original software and hardware. Membership £3. Contact Ade Ajidahun, St Andrews House, 125 North Road, St Andrews, Bristol BS6 5AH ☎ 0272 240399

Gamer-Link International pen-pal club for gamers. Free swap service, advice on tips and cheats. Life membership £5. Contact Stu, 28 Churchfield, Ware, Herts SG12 0EP.

GFA Basic Forum Contact J Findlay ☎ 0788 891197 or send SAE to 52 Church Rd, Braunston, Nr Daventry Northants NN11 7HQ. Free advice on programming in GFA. Also tutorial disk for sale. Beginners and advanced users welcome. Free membership

Gibraltar Amiga Users Club PD library, monthly newsletter, disk magazine, competitions, regular meetings (in the John Macintosh Hall). Membership from £6 per year. Contact David Winder, 7 Lime Tree Lodge, Montagu Gardens, Gibraltar ☎ 010 350 79918

Guru Masters PD demos etc, contact the Sheriff, 111 Sherbourne Rd, Banbury, Wolverhampton, WV10 9EU ☎ 0902 782277

Hampshire PD Club Mike Gallienne at 79, Carless Cl, Rownes, Gosport, Hants, PO13 9PW on 0705 585323. Public Domain Disks at 35p. Monthly competitions. SAE for more info to the above address. £10 a year

Harleys PD Swaparama Public domain swapping by mail. Contact G Varney, 140 Weston Drive, Otely, West Yorks LS21 2DJ ☎ 0943 466896

Hereford Amiga Group Membership free, help, exchange of PD and shareware. Lotus Turbo 2 Quad Player Championship. Contact John Macdonald, Alma Cottage, Allensmore, Hereford HR2 9AT ☎ 0981 21414

Hermit Computer Club Hardware help and information, program swapping. Meetings 7-10pm, Mondays. Membership £3 per term, 50p per night. Contact John Maynard, Hermit Centre, Shenfield Road, Brentwood, Essex CM15 8AG ☎ 0277 218897

Highland PD Free PD list contains lots of education, business and games disks. Free advice to beginners. Contact David Paulin, 255 Drumrossie Avenue, Inverness IU2 3SX ☎ 0463 242431.

Homesoft PD Over 2000 Amiga PD from 20p to 69p. Send SAE for free disk catalogue. Contact Chris Horne 23 Stanwell Cl, Wincobank, Sheffield S9 1PZ

HTS (Malta) Free membership. Contact K Cassar, Block 1 Flat, 6 H E Hal-Tmiem, Zejtun ZTN07 Malta ☎ 674023

Hyndburn Amiga Users Club Tuition, advice, PD, and more. Meets Mondays, 7pm, at the Canine Club, Accrington (£1 on the door). Contact Nigel Rigby, 7 Brecon Avenue, Oswaldtwistle, Lancashire BB5 4QS ☎ 0254 395289

Imagine Object Makers Will make Imagine objects of most forms and supply already-produced objects under request. Send SAe for more info. Contact Charles Mo, 16 Calder Crescent, Taunton, Somerset TA1 2NH. Membership free; charge for each object only.

In Touch Amiga Penpals, contacts, PD, swaps £2.50 per year. For more information contact P Allen, 0342 835530, PO Box 21, Lingfield, Surrey RH7 6YJ

Independent Commodore Products Users' Group Free PD software, 100 page journal, technical helplines and discounts. Contact the Membership Secretary, PO Box 1309, London N3 2UT ☎ 081 346 0050 after 6pm, or your local branch:

Chelmsford ☎ David Elliott 0245 460189
Coventry ☎ Will Light 0203 413511
Dublin ☎ Geoffrey Reeves 010 353 1 288 3863
Exeter ☎ John Buckle 0392 214760
Macclesfield ☎ Peter Richardson 0298 23644
Mid Thames ☎ Mike Hatt 0753 645728 (8–10pm)
Solent ☎ Anthony Dimmer 0705 254969
South East ☎ John Bickerstaff 081-651 5436
South Wales ☎ Ian Kelly 0222 513815
South West ☎ Peter Miles 0297 60339
Stevenage ☎ Brian Grainger 0438 727925
Stoke-on-Trent ☎ David Rose 0782 815589 (eve)
Watford ☎ Bob Rigby 0923 264510
West Riding ☎ Kevin Morton 0532 537318
Wigan ☎ Brian Caswell 0942 213402

JJC Amiga correspondence course £50 per year. Contact PO Box 19, High Wycombe, Bucks HP11 1UF. ☎ 0494 983347

Kent Youth Computer Group Contact Jim Fanning ☎ 0233 629804 North Youth Centre, Essella Rd, Ashford, Kent. Meetings at the North Youth Centre, Thursdays 7 – 10pm computer fair visits, video and DTP work, monthly newsletter Membership 40p per month

KTS PD Library Only 80p a disk. Contact J Hicks, 75 The Drive, Rochford, Essex SS4 1QQ ☎ 0702 542536. Send SAE for catalogue.

Langham PD Send SAE and blank disk for a free virus killer ans catalogue. Contact Richard Payne, 89 Wolverhampton Road, Codsall, Wolverhampton WU8 1PL.

Lothian Amiga Users Group Contact Andrew Mackie ☎ 0506 630509 52 Birniehill Ave, Bathgate, W Lothian EH48 2RR Advice and help in buying hardware, software etc, group buying, dealers' circulars welcome. Membership free

Magic Windows H/W projects, programming, PD, help and advice on all topics, beginners welcome. For more info send SAE to Frame, 26 St Benets Road, Stalham, Norwich, Norfolk NR12 9DN

Maritime Amiga Club Maritime computing, interact with seafarers ashore on Amigas. Contact CDR K Osei, GN Ships Refit Office, 51 Rue de la Bretonniere, 50105 Cherbourg, France. ☎ 33 33225447

Marksman (Trojan Phazer user group) Contact David Green, 67 Thicket Drive, Maltby, Rotherham, S Yorkshire S66 7LB Promotes use of the Trojan Phazer, swaps PD and own programs, disk magazine

Master PD PD from 79p, general help. For info send SAE. Contact Alan Hines, 44 School Lane, Eaton Bray, Beds LU6 2DT. Membership free.

Mystery Game Swapping Send a game and receive a mystery one back. Deborah Tully, 08 Lime Court, Pendleton, Salford, Gtr Manchester M6 5EG

N Ireland Amiga User Contact Stephen Hamer, 98 Crebilly Rd, Ballymena, Co Antrim BT42 4DS. Disk based mag £2.50 per issue. Free PD, SAE for further info

New Hall Amiga Users Club Games, graphics, music, Workbench programming. Meets 7pm every Tuesday, New Hall Social Club, 104 Bury Rd, Dawtenstall. Membership £5 per year, under 16s not allowed. Contact Bill Grundy, 115 Stanley St, Accrington, Lancashire ☎ 0254 385365

Numero Uno PD, swapping, competitions, pen pals. £3.50/year. Contact Dillon Eyre, 21 Burstall Hill, Bridlington, N Humberside YO16 5NP

Pascal Programmers Group Disk-based newsletter for HighSpeed Pascal users. Free membership. Contact Colin Yamall, 93 Manchester Rd, Wilmslow, Cheshire SK9 2JQ

Pennine Amiga Club 26 Spencer Street, Keighley, West Yorkshire BD21 2BU. Free membership, free advice and a newsletter. Contact Neville Armstrong for more info ☎ 0535 609263

Perth and District Amateur Computer Society For further information contact Alastair MacPherson 137 Glasgow Rd, Perth. Meetings third Tuesday in every month, 8pm. General advice, talks, Amiga PD. Membership £6 or free for under 16s

Pete's PD PD from only £1 per disk. Send 50p for disk catalogue to Peter Garrett, Chestnut Cottage, White Lion Road, Amersham, Bucks HP7 9JR

Phoenix Demo Coders, musicians, artists and designers making the best demos. Free membership. Contact Frank, 46 Hall Road, Chadwell Heath, Romford, Essex, RM6 4LJ ☎ 081 597 4661

Public Domain Exchange Demos, music, utilities, animation. Annual fee £8 Contact D McLeish, 26 Taunton Ave, Leigh, Lancs WN7 5PT

Public Domain User Group Swaps PD, provides advice. SAE to 12 Oxford Rd, Guildford, Surrey

PUG Contact S Jackson ☎ 0446 772331 Whitebeam Cottage, Trerhyngyll, Cowbridge, S Glamorgan Cheap PD library, swap hints, reviews, articles etc. Send an SAE for further details

Quality Amiga PD Only £1.20 per disk. Send SAE for free catalogue to John MacLeod, 4 Worcester Avenue, Grimsby, South Humberside DN34 5EY

Redburn Computer Users Group Help, ideas, PC, graphics and business. Meets every second Wednesday 6.30 pm to 9.30 pm. Contact Ruby Anderson ☎ 0294 313624.

Robotronix Amiga Club Bi-monthly newsletter, tips, cheats, programming support, advice. Send SAE for details. Contact P Symonds, 36 Century Road, Cobholm, Gt Yarmouth, Norfolk NR31 0BX ☎ 0493 667161, Membership £15 a year.

Rye Amiga Group Regular newsletter, swap/meet at the Rye Community Centre. For info contact Oliver Campion, 71 The Mint, Rye, E Sussex TN31 7EW ☎ 0797 222876

Shieldsoft PD at 26 Doren Avenue, Rhyll, Clwyd LL18 4LE. BASIC, AMOS, CLI help. Free catalogue disk. Membership free ☎ 0745 343044

Sherlock PD Quarterly disk mag, help and advice for beginners. 50p per disk. A Doyle, 44 Milton Street, Warrenpoint, Co Down, N Ireland

Shropshire Amiga Link Advice, monthly disk mag, PD. Free membership. Contact N Cockayne, 2 Dodmoor Grange, Randlay, Telford, Shropshire TF3 2AW ☎ 0952 591376

Sittingbourne Co-op Computer Club Programming, PD, games, free write-in advice service. £10/year, £5 unwaged. Meetings Mondays 6–9pm at Mall beneath Regis Suite. Contact Andy, Unit 11, The Mall, 121–127 East Street, Sittingbourne, Kent ME10 4AQ ☎ 0795 842608

Slim Agnus 115 Brocks Drive, North Cheam, Sutton, Surrey SM3 9UW. Group meets the last Thursday of every month. PD library, BBS, advice from Amiga experts. Contact Philip Worrel.

Software City Swapping, competitions, club magazine. Membership £8. Contact N Richards, 9 Hollis Close, Manor Estate Farm, Rawmarsh, Rotherham, S Yorks S62 7LX or ☎ 0709 526092

Software Exchange Club Free help and advice. Contact Michael Lacey, Fern's Post Office, Enniscorthy, County Wexford, Republic of Ireland

Software Exchange Service 13 Bournville Lane, Stirchley, Birmingham, West Midlands B30 2JY. For more info ☎ Michael Pun 021-459 7576

South 16 Amiga/ST User Group Bi-monthly disk based mag, discounts available from local stores, free advice and extensive PD library. £12/year. For more info send SAE to PO Box 16, Southampton, SO9 7AU

Southend Team Music, PD. Free membership. Contact Scotty, 52 Prince Avenue, Southend-on-Sea, Essex SS2 6NN ☎ 0702 333974

Southport Amiga Users Advice, friendly evenings Mondays at 8pm. No charge, discounts from local store. For info contact Michael Mitcham, 5 Easdale Drive, Ainsdale, Southport, Merseyside ☎ 0704 79936

South Wales Club Newsletter, PD library, free newsletter, programs, help and advice. For more info contact D Allen 53 West Avenue, Trecenydd, Caerphilly CF8 2SF

Steel PD, cheats, ideas, music, art, programming, hardware mods. Free membership (postal only). Contact James Whitehead, 33 Middle Cliffe, Drive Crowedge, Sheffield S30 5HB

Tay-Soft PD Club Non-profit-making postal PD, advice, Disk newsletter, Helpline 6–10.30pm. Contact Dave Thornton, 46 Balmerino Road, Dundee DD4 8RR ☎ 0382 505437. Membership £2.50 (free Utils disk on joining).

Tazmania PD For quality PD come straight to me. Send blank disk and SAE. Contact M Hewson, 4 Boultham Avenue, Lincoln LN5 7XZ ☎ 0522 538706 after 6pm. Membership free; £1.25 per disk + 60p p&p.

The Amiga Club Monthly newsletter, competitions, software exchange, huge PD library, cheats, tips, reviews. Contact G Starling, 31 Pine Lea, Brandon, Durham DH7 8SR. Membership £10 life plus two free games and DCopy.

The Amiga Studio Friendly, helpful advice for serious users of the Amiga. Monthly newsletter, PD library, free loan of equipment to members, bar. Meets 7pm Tuesdays, Mitchells Club, Scotia Road, Tunstall. Contact Dave Rose ☎ 0782 815589

Twilight Advice on hardware and software,Fred Fish PD. Free membership, disks 50p each. Contact 13 Mavis Court, Ravens Close, London NW9 5BH

UK Subs The Hanger BBS, trading post for PD files, swapping. Free membership. Contact Diddy / Arklight ☎ 0525 875518

Unique Styles Derek at 15 Montgomery Rd, Highbrooms, Tunbridge Wells, Kent ☎ 0892 518319. By post only. For Amiga artists, programmers/musicians. Free membership

Video Visuals Exclusively for video producers, PD library, genlocking, digitising, quarterly disk magazine. Membership £10 per year. Contact Chris Brown, 4 Lavender Close, Witham, Essex CM8 2YG

Wardray Hem Consortium User group for Amiga and possibly others. Membership fees to be discussed and incurred. PD library to be set up. Also Hem connection – worldwide contacts wanted. SAE and disk to WardCon info, (AS) Warren Hardy, 21 Stockfield Ave, Fenham, Newcastle upon Tyne NE5 2DX

Warpdrive Help-line, PD library, bi-monthly disk mag, free drinks, competitions and infosheet. £15 per year. Contact B Scales 110 Burton Ave, Balby, Doncaster DN4 8BB ☎ 0302 859715

WCSPSA! Help available. PD disk of your choice and newsletter every month. PD at £1. Membership £25. For further info contact A Jamieson ☎ 0749 677609

Willow PD Free advice, disks only 90p each. Free membership. Contact Willow PD, 2 Longbridge Close, Sherfield-on-Loddon, Basingstoke, Hants RG27 0DQ ☎ 0256 882654

Worldwide PD Club Over 2,600 disks held – you supply the disks + postage. The best way to get PD in BFG (British Forces Germany). Contact Dave White, Postfach 3231, 4030 Ratingen 1, or Berliner Str 39, 4030 Ratingen 1 ☎ (Germany) 02102 499729. Membership fee DM60 a year or DM6 a month.

Wrexham District Computer Club PD, library, equipment loan. 10p to join, 50p to get in. Meetings at the Memorial Hall, Wrexham every Thursday, 7-10pm. Contact Paul Evans, 3 Ffordd Elfed, Rhosnesi, Wrexham, Clwyd LL12 7LU

Zymurgy General Amiga computing. Free membership. For further info contact A Carr, 39 Sewlkirk Rd, Ipswich, Suffolk IP4 3JB ☎ 0473 725241

Note: this list is provided as a free service for amateur, non-profit-making user groups. *Amiga Shopper* does not endorse or recommend any particular group and cannot be held responsible for any losses or problems you might suffer.



Software for free

Whether your interest is business, cooking or sewing, there's a program for you! Ian Wrigley looks at a clutch of bargain-priced software from the public domain

Welcome to another column, where once again we fearlessly search out the best in Amiga PD, shareware and licenseware. This month, I'll be looking at some updates to old favourites (and not-so-favourites), as well as checking out the new releases. So without more ado, as they say, down to business...

HOME BUSINESS PACK

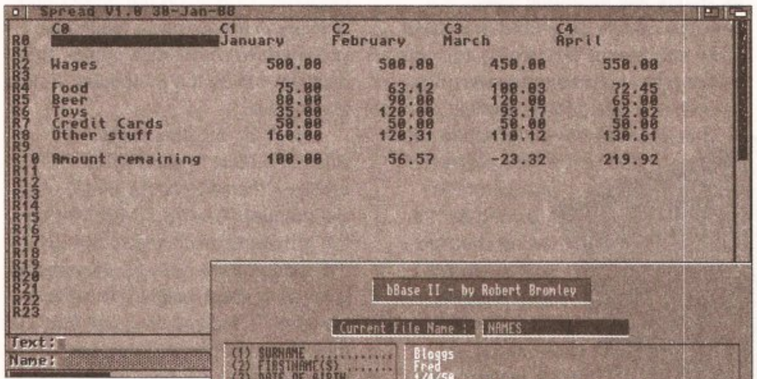
Anglia PD disks HB1 (4 disks)

Anglia PD is compiling more and more of these collections of related PD software – we reviewed the Desktop Video Pack back in issue 17. (Can't live without reading that? Check out our back issue service, page 95.) Basically, the company collects a range of programs around a theme – in this case, 'home business' – and produces a printed manual to go with them. The manual for the *Home Business Pack* contains a 17-page introduction to each of the programs included in the package, and then a print-out of the documentation files for each provided by the authors. The walk-through not only introduces you to the programs, but also describes some fundamentals such as directory structures – so even if you're completely new to computing, you should be able to get the hang of things without too much trouble.

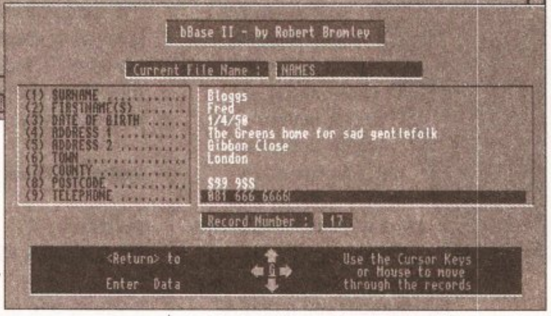
The whole manual is 52 pages long, and it's nice to see that Anglia actually has people who know the Amiga and give a damn about the software that they're selling – too many people just slam a couple of files on to a disk and charge you a fortune for the privilege of discovering that nothing on it actually works properly.

> ***"If you've never used a spreadsheet before, you may be put off for life."***

On the first disk are two programs: *Spread 1.0*, a spreadsheet (unsurprisingly), and *bBase II*, a database. Let's start with *Spread*, since PD spreadsheets are few and far between on the Amiga. Is this the hidden gem that we've all been searching for? Well... no, actually. The program was created by Richard Krehbiel; the first version was written on a PDP-11 mini-computer (ask your grandfather), and in January '88 was ported to the Amiga. According to Richard, "I had never used a



***Spread* is a spreadsheet which was written in 1988 – and it shows**



This is *bBase II*, a powerful, easy-to-use database. It won't work on 512K Amigas, though

RATING THE PROGRAMS

Just to be awkward, I rate the software that I review in two different ways, depending on what it is. Disk magazines, collections of clip art and the like are given a 'value for money' rating, since you're essentially paying for one thing, or group of things, on the disk.

Single programs which appear in a collection of others, or programs which I've downloaded from bulletin boards, are given a 'program rating', which reflects how good I think they are, taking into account usability, bug-proofness, my own particular (or should that be peculiar?) tastes and so on. Both ratings are out of a maximum possible 10.

BEGINNERS START HERE

What is PD?

PD is a general term which many people incorrectly use to refer to all freely-distributable software. In fact, PD (which stands for Public Domain) software is only one branch of this area; the other main one is shareware.

Essentially, PD software may be copied and used by anyone, although some authors place restrictions such as not allowing a PD library to charge more than a certain amount for the disk.

Shareware, on the other hand, should be treated more like commercial software. Although you are allowed to copy and pass around shareware programs, if you like one then you should pay the requested fee to the author – it's normally around £15 or less, and often entitles you to an upgraded version or a printed manual. Paying your shareware fees encourages software authors to write more programs – and if they don't, the Amiga scene will be a poorer place. Don't think that you're paying money for nothing, either – often hundreds or even thousands of hours of work have gone into creating a program, and it's only right that the programmer receives some reward for his or her work.

The third branch of software that we cover here is called licenseware. This is a form of shareware which is licensed to one (or more) PD libraries. In essence, when you buy a licenseware program you are buying shareware and paying the license fee at the same time. For this reason, you should treat any licenseware that you buy exactly as you would treat a piece of full-price commercial software – don't pass it around to your friends. You've only bought the right to use it yourself.

Can I pass other people copies?

Yes – that's the way that PD reaches a wider audience. Just make sure that you have followed the author's requirements for distribution. These are normally things like not charging more than a certain amount for the disk, not altering the program, or making sure that all the original documentation is included on the disk.

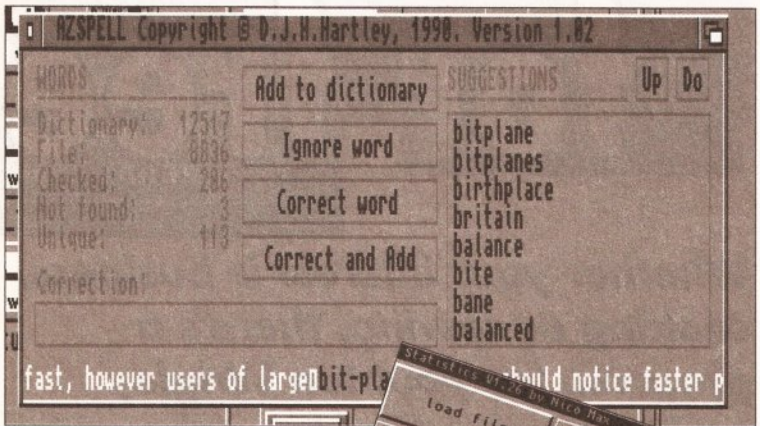
You can also pass on shareware – but not any registered copies of programs. If, when you pay your shareware fee, the author sends you an improved version of the program, then be careful not to give that out. Only pass on unregistered shareware.

You should not, of course, pass on licenseware – it should be treated in the same way as registered shareware.

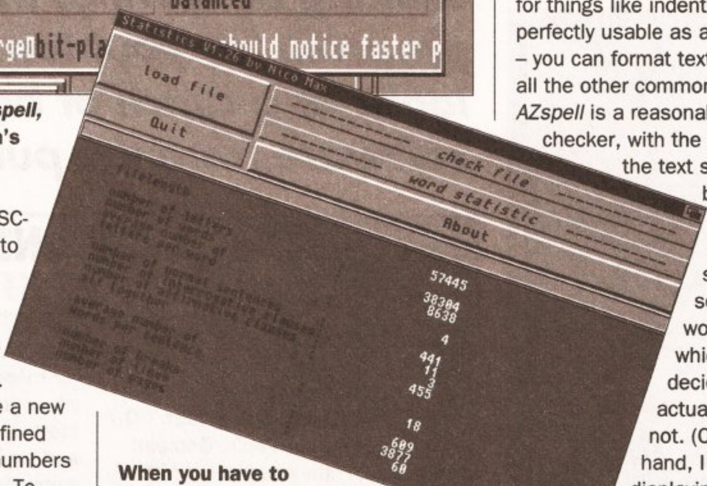
spreadsheet, so I designed *Spread* with few pre-conceived notions about how it should work. As far as I know, *Spread* bears little resemblance to any other spreadsheet." This doesn't bode well for starters – I mean, who wants a package which is totally different from anything else on the market? Still, launching *Spread* doesn't result in too many shocks – there's a fairly typical rows-and-columns display, along with places at the bottom of the (initially NTSC- or American TV-sized) screen to enter text into a cell, and assign it a name.

It's only when you start to use *Spread* that the oddities rear their ugly heads. For example, when you create a new spreadsheet, the cells are defined neither as formula cells (for numbers or formulae), nor as text cells. To enter data into any cell, you must first go to the Cells menu and define it (or hit Right-Amiga-T) before you can start typing. This is fine for the first couple of times, but try creating a whole spreadsheet and you'll soon get heartily sick of the process. Why not initially set all cells as being formula cells, and allow the user to change that to Text whenever necessary? Better yet, why not have the program be intelligent enough to work out what you're entering?

The most serious limitation as far as I'm concerned (overlooking things like the fact that the whole sheet can only be a maximum of 60 rows by 36 columns) is that copying and pasting isn't 'intelligent'. That is, if I copy a formula from column 1 which adds up all the values in that column and paste it into column 2, I want the formula to change so that it's now adding up the values in column 2. Combine the fact that this doesn't happen with the very few, limited formulae (Sum is about the only built-in formula, in fact, and even it seems to work in a particularly perverse way) and you're in for a great deal of repetitive typing before you've got anything like a working spreadsheet. Finally, and to add insult to injury, there isn't even a decent load/save file Requester built in – you've got to type in the full path name yourself.



Check your spelling with *AZspell*, one of the programs in Anglia's Home Business Pack



When you have to know how many affirmative clauses you've used, ask *Statistics*.

I suppose that many of these gripes are unfair to a program written back in the dark ages of 1988, but if you've never used a spreadsheet before you tackle *Spread*, you may well be put off for life. The Anglia manual says that the program "lacks a great deal of refinement", and that "it will allow you to decide if purchasing a commercial spreadsheet makes sense." It certainly won't become your financial planning tool of choice, that's for sure.

> **"You may find these are all the 'home business' programs you ever need."**

Moving on, the second program on disk 1 is an old favourite of mine, Robert Bromley's freeware database *bBaseII 5.5*. It's a fast, easy-to-use database which can cope with up to nine fields and 600 records (or a database of around 125K, whichever is the least). Each record can optionally have around 1K of 'notes' (that is, any text you want) associated with it.

bBaseII is as fully-featured as *Spread* is sparse. Printing mailing labels, sorting records, copying records to CLIP:, printing individual records, a filtered list or the whole database, adding and deleting fields and records easily...the list goes on. The program multi-tasks well, and as long as you don't need more than one line of text per database field, can be highly recommended. The only thing which may limit its use is that it requires at least 1Mb of RAM – it won't work on a 512K Amiga.

Disk two of the collection contains three programs: *QED*, a text editor; *AZspell*, a spelling checker; and *Statistics*, a program to analyse and output a range of statistics about a text file.

QED is fast, and relatively easy to use. Although really designed as a text editor (there's copious support for things like indenting lines), it's perfectly usable as a word processor – you can format text, word wrap and all the other common requirements. *AZspell* is a reasonable spelling checker, with the neat feature that the text scrolls along the bottom of the screen as it's being checked – so you always see a suspect word in context, which helps you decide whether it's actually correct or not. (On the other hand, I suspect that displaying the text in this way slows things down rather.) If you want to try it for yourself, you'll find *AZ Spell* on this month's cover disk.

Finally on this disk, *Statistics*, by Nico Max, is a curious little program. Given a text file, it will tell you the number of letters, words and average number of letters per word in the file. You are also told the number of normal sentences, number of interrogative clauses and number of affirmative clauses, along with the average number of words per sentence. Quite why you want to know all of this (and, indeed, quite what on earth an affirmative clause is, and how the program checks for it) is beyond me. But if you find yourself pining for the lack of such knowledge, pine no more.

Disk three contains the statutory, and dreaded, home accounts program – in this case, *Account Master 2.0*, which was reviewed in Issue 19 of *Amiga Shopper*. It has cute scrolling screens, it will automatically enter regular payments such as direct debits on the correct day, and so on. Regular readers will know that I'm not a great fan of home accounts programs, but if you disagree with me then *Account Master* is a perfectly reasonable example of the genre.

The fourth and final disk in the set contains *Clickdos*, a basic disk navigation utility in a similar vein to *SID* et al, and *DCopy*, which is probably the best looking – and most technical – disk duplication program on the market. *Clickdos* is a good introduction to file navigation programs, but it really is too basic to be of much use to anyone but the beginner. *DCopy*, on the other hand, is scary in the extreme. Whatever you want from your disk copier, this program will do it – in spades. It also looks great.

All in all, Anglia's *Home Business Pack* is good value for money – the pack costs £4.20, and the manual an extra £2.99. Not all the programs are brilliant, but (with the exception of *Spread*) they should give you a good insight into what's available – and you may well find that they're all the 'home business' programs that you ever need.

Value for money..................10/10

AIBB

PD Soft disk V948

If you're one of those people (to quote Dennis Norden) who has a 'mine's faster than yours' complex, you need to get hold of a program called *AIBB*, or *Amiga Intuition-Based Benchmark*, by LaMonte Koop. This freeware program will test any aspect of your Amiga that you can think of, from maths performance through graphics, CPU, co-processor speed and so on. All test results are compared against 'standard' machines, and displayed both as numerical data and as a histogram.

The documentation for this program is extremely detailed, and includes loads of information on computer systems in general and the

GET IN CONTACT!

If you've written – or discovered – any PD, shareware or licenseware that you think should be reviewed, or if you've got any comments or suggestions, write to me c/o *Amiga Shopper*, 30 Monmouth Street, Bath BA1 2BW. Alternatively, you can contact me on cix as 'iwrigley', or on the internet as 'ian@vampire.demon.co.uk'.

COMPETITION



Your chance to win a whole lotta PD software

HOW TO ENTER

PART ONE

Simply match up each Public Domain Library in this issue of *Amiga Shopper* with one of the locations numbered on the map above, then write the number next to the corresponding library in this list:

	number		number
ANGLIA PD	....	AMIGANUTS	....
BELSHAW'S	....	DISCOVERY	....
DOCTORSOFT	....	EXPRESS PD	....
NBS	....	PATHFINDER	....
PD SOFT	....	RIVERDENE	....
SECTOR 16	....	VULCAN PD	....

PART TWO

Search through the advertisements to find the answers to these questions:

1	Which company "Break the sound barrier"?	....
2	Who distribute *Deja Vu?*	....
3	Which PD firm employs Mr Spock?	....
4	NBS are based in which town?	....
5	Who has the phone number 0702 466933?	....
6	"Pen led driver" is an anagram of?	....

Now send your entry on this form (or a photocopy) to:
***Amiga Shopper* PD Competition, 29 Monmouth Street, Bath BA1 2DL.**
Closing date is Monday 10 May. First name out of the hat on that day wins. Our thanks to Anglia PD, NBS, Express PD, Doctorsoft, Vulcan PD and PD Soft for their prize contributions.

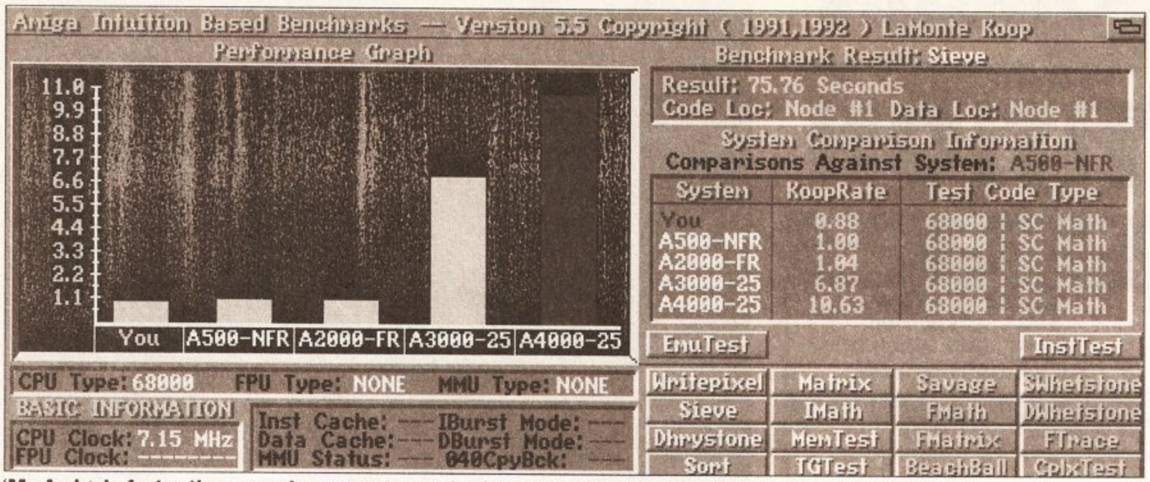
Name..

Address ....

....

.... **Post code**...........................

Tel.. **What model is your Amiga?** ....



'My Amiga's faster than yours' arguments resolved once-and-for-all with *AIBB*. Can't argue with graphic proof, can you?

Amiga in particular. It discusses different types of benchmarking procedures, and gives pros and cons for each. If you're computer-literate but new to the Amiga, this is worth getting for its discussion of the Amiga's hardware alone.

The actual tests can take quite some time to run – the full suite is likely to take an hour or more on a 68000-based machine such as the A500. Options are available for things such as using 68020-generated code if you're running an Amiga with an 020 or greater processor, using or disabling any maths co-processor, and setting 68040 options such as enhanced math code. A separate screen gives you full details of your system's configuration, with information such as CPU, FPU and MMU type and speed, settings for the 68040 (if your Amiga has one), operating system information, memory configuration libraries running and so on and so on.

There are a number of performance comparison programs around, but *AIBB* must be just about the most fully-featured of the lot. My only criticism is that it only works in NTSC screen mode – so I guess that some of the 'absolute' comparisons with the program's built-in values for other machines may be slightly different. On the other hand, if you're only going to use the program to compare Amigas that you can actually run it on, that's no problem.

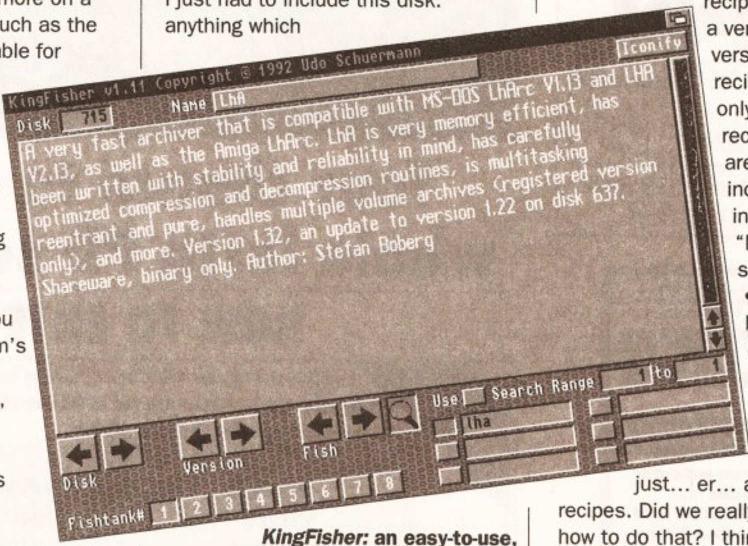
> **"It will read any text file and just extract the relevant information."**

Got an inferiority complex? Then get a copy.

Program rating......................9/10

COOK & STITCH
George Thompson Services

I just had to include this disk: anything which includes information on brewing, cooking and sewing is just about eclectic enough for me!



***KingFisher:* an easy-to-use, elegant program for cataloguing the Fred Fish disks – all 800-odd of them**

The disk consists mainly of plain text files (the *FullView* text browser is included), although there are a couple of programs too. The contents are:

- **Bon Appétit** – a demo of a shareware 'recipe manipulation program'. In fact, this program turns out to be a database program: enter 'dessert' and it'll list any recipes that you've entered. It claims to deal with files created by *CompuChef*, *QuikBook* and *MealMaster* – all similar programs for different computers – but I had great difficulty in doing anything much at all without the program bombing out. "Why should I throw out my good old index cards?" asks a section heading in the documentation. My answer? Don't.
- **Diet Aid** – a calorie-counting program. The documentation from the author is rather sparse, and although someone else has added an extra explanatory file, it's still not exactly easy to use.
- **HyperCook** – a HyperBook-based recipe database. It's a very cut-down version, in fact, of a recipe database – only a couple of the recipe categories are present, including the intriguingly-named "Drinks and smoothies."
- **Simple Cook** – billed as "an example of using a simple text file approach to filing recipes", this is, in fact, just... er... a text file of recipes. Did we really need to be told how to do that? I think not.
- **Home Brewer** – make your own drinks, non-alcoholic and alcoholic. This is a basic text file of recipes (again); my favourites are the ginger beer recipes, one of which includes in its ingredients "1 kerosene tin of water". Hmmm...
- **Stitchery** – a demo of a shareware cross-stitch pattern generator which takes IFF pictures as its input.

This disk is good for a laugh – but not, sadly, for much else, unless you're an avid recipe collector. And even then...

Value for money....................5/10

KINGFISHER
George Thompson Services

There are now over 800 Fred Fish disks available, and keeping an up-to-date list of what's on them is no longer a trivial task. *KingFisher*, by Udo Schuermann, is an elegant way to do just that, supporting features such as allowing the database to be split across a number of disks (essential if you're using floppies, since the number of Fish disks available means that the database is huge), adding new Fish disk details automatically from the Contents files on those disks, outputting the data to a file or printer and so on.

Adding details about the contents of a new disk is, in fact, rather impressive. Since many people obtain the details from e-mail or internet news groups, the program will read any text file and automatically ignore headers, signatures and the like, just extracting the relevant information.

As well as just browsing in disk details you can, of course, search for a specific program in a number of ways, such as by file name or by text in the description. You can search for up to six text strings, and specify the range of disks to be searched if you wish. A very useful feature is the 'Version' search, which will find other versions of a program you've found. So if you got, say, the *LhA* archiving program from disk 577 and want to know if there's been a later release, just click on the Version button and you'll almost immediately be taken to disks 593, 637 and then 715 – all of which contain updates to the program. Dead smart.

As supplied to me, *KingFisher* contained the contents of all the Fish disks from 1 to 798 – which is pretty impressive, given that at the time of writing disks 801 to 810 had only just appeared. Documentation from George Thompson Services included on the disk says that the company will update your database if you return the disks every four weeks with enough postage to cover their return – service indeed.

Value for money.....................9/10

FILE AND HD UTILITIES 6
PD Soft disk V978

This is another of PD Soft's collections of utilities for managing your disks and files, and contains a number of different programs. The value of collections such as this depends largely on what you already have – if you only need one of the programs, you're probably just as well getting it from a Fish disk or something similar, since at least there might be something else on the disk which you can play with. On the other hand, beginners or people new to PD will find such collections invaluable – assuming that everything works. Read on...

First off on this disk is *DiskMate* by Malcolm Harvey. It's a multi-tasking disk copy and erase utility which will only work on AmigaDOS

2.0x (or, presumably, 3.0). The only real problem with this program becomes clear when you launch it: to fit its range of functions into a small window, clarity has been sacrificed somewhat. Many of the gadgets have only a one-letter abbreviation on them, so unless you know what you're doing it is possible to erase or format a disk without realising it – perusing the documentation is a definite requirement here!

Once you've done that, though, it's clear that *DiskMate* will do just about anything you want it to. It copes with both 880K and 1.76Mb



***DiskMate* offers just about every disk copying and erasing function you can think of... just make sure you remember what the abbreviations stand for!**

floppies, and its functions include:

- Format a disk
- Install an AmigaDOS bootblock on a disk
- Check a disk for faults
- Duplicate a disk
- Copy to/from the RAD: RAM disk
- Back up a disk to a file, and write that file back as a disk – useful for keeping backups of original disks on your hard drive.

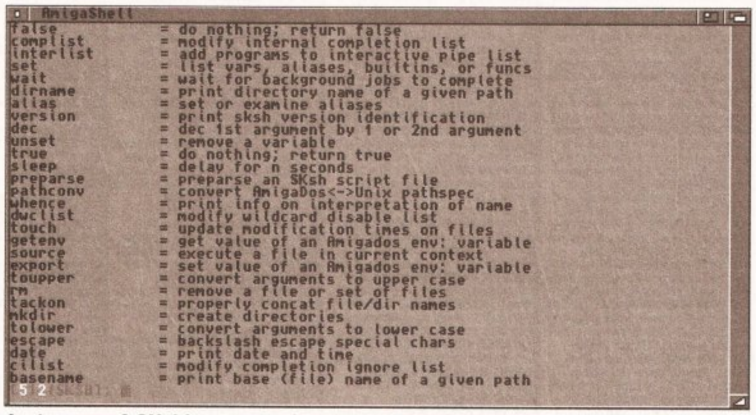
Next in the collection is *XTrash*, a freeware program by Stefan Plöchinger. This is designed to

> **"Life's too short to read a 28-page doc file on options, let alone learn them."**

replace the Amiga's Trashcan – which is, of course, just a directory; dragging files to the Trashcan icon simply moves them to that directory, and selecting Empty Trash from the Workbench's menu then deletes the contents of that directory. The idea is that dragging files to the *XTrash* icon immediately deletes them – and that dragging a floppy disk to the icon will format it. The idea is fine; sadly, in practice, try as I might I couldn't get *XTrash* to work. It looks as though someone has trashed the config file from the floppy disk.

Hidden under *DiskMate's* drawer icon was another drawer, containing *DirKing*. Frankly, it might as well have stayed hidden. It's (yet another) directory listing shell command, with recursive path searching, the facility to specify a file matching pattern for each directory level, and a large number of filters to restrict the output to exactly what you want. For this, the author wants a £6 registration fee – and perhaps you might think that it's worth it. Personally, I use the 'dir' command to search directories – and that's it. Life's too short to read a 28-page doc file on using all the filters, options, file matching requirements and so on – let alone learn them.

Next up is *PowerData*, which enables any program to read and write *PowerPacker*-compressed files. It installs as a standard AmigaDOS 2.04 commodity (it requires 2.04 or above to run), and should work with all processors, including the 68040. Documentation is provided in the form of an *AmigaGuide* document – great if you have it; otherwise



Just some of *SKsh's* commands, as produced by typing 'help'. Help!

opening the file with a viewer such as *muchmore* will work, although the formatting is a little untidy.

Two installation scripts are provided, one for use with *IconX* and one for Commodore's *Installer* program, which is supplied with Workbench 2.1 and above. I used the *IconX* script, and tried to run the program. A Requester informed me that it "Couldn't interface with the Commodities." OK, I installed it by hand and tried again. Same result. After about half an hour of fiddling around, I gave up on the whole idea. It's a real shame, because this could be an extremely useful program – compresson and decompression of files on-the-fly, without requiring the creation application to know anything about *PowerPacker*. But even after struggling through all the documentation several times, I couldn't see where I was going wrong – and in the end I decided that nothing is worth this much hassle.

Finally on this collection is *TrueED*, a £25 shareware file editing program by J Klein. Registered users get the full version, which includes a spelling checker, the ability to print, and on-line help (none of which is in the distributed version). Also, the registered version is smaller – according to the documentation, "this version has been blown up [in size] to motivate users to pay the shareware fee." There's also no manual with the distribution version – again, because you should register. Mr/Ms Klein has clearly decided that we're jolly well going to register this program before we get something even remotely useful. Well, sorry, but I don't think so. The scrolling is slow, the program jumps backwards and forwards to the Workbench screen every time you pull up the About or Prefs Requesters, and there are far better programs that are totally public domain.

> **"It's incredible that this is freeware, considering how much work is in it."**

All in all, *File* and *HD Utilities 6* is something of a let-down. *DiskMate* could be useful, *PowerData* would be great if it worked, and the other three programs aren't worth giving house room to. Some of PD Soft's other utilities collections have been brilliant – this one isn't.

Value for money.....................4/10

FISHING AROUND

Both Anglia and PD Soft have sent me new Fish disks this month – so off we go, trawling for the latest and best software as compiled by the great Frederico.

SKSH

Fish disk 791

SKsh is a Shell written by Steve Korenbased, which is based on the Unix 'ksh' shell. It only runs on Workbench 2.1 or above, and requires 3Mb of free hard disk space – don't even think about running it from a floppy! The installation process is made easy by using a sophisticated installation script which takes you through the process step-by-step, giving advice and information as it goes. (But note that, contrary to what the documentation file says, you do have everything required in the archive on Fish disk 791 – there isn't a separate archive on another disk.)

The program is, as the documentation says, definitely "not for casual Workbench users who want a 'point and click' interface." Indeed, you should only really consider this if you find the standard Shell limiting, or if you're used to Unix and feel comfortable in that environment. If that's the case, then *SKsh* provides you with such wondrous things as:

- Shell functions
- Aliases
- Command substitution
- Local variables, functions and aliases
- Control structures and tests
- Emacs-style line editing
- I/O redirection and pipes
- A large number of utilities such as 'wc' and 'grep'
- Support for ARexx
- Unix filename conventions

All of this is provided as freeware by Steve – which is frankly pretty incredible when you consider how much work must have gone into creating it all. The documentation alone looks as if it took months to write, and includes a full user manual with a tutorial, as well as 'man' reference pages.

There's little point in talking much more about this program – you'll know already whether you're interested in it. I'm certainly going to have an extended 'play' – it may just become my Shell of choice (if I can find a spare 3Mb on the Workbench partition of my hard drive...).

Program rating.......................9/10

DRAGIT
Fish disk 792

DragIt is a small utility by Steve Lemieux which enables you to move or size windows without using the drag bar or sizing gadget. You perform this minor miracle by holding down a 'qualifier' key as you click on the window. As with more and more programs, you'll need OS 2.0 or above to use the program.

Installation is simple: copy the program to your startup disk, edit your startup-sequence and re-boot. The options are controlled via a Prefs program, which you just put in your Prefs drawer. After that, you just go away and forget about it – until you want to move a window whose title bar isn't visible. Then just click in the main part of the window with Control or whatever held down – and the window will move with your cursor. Likewise, clicking at any of the edges of the window with the modifier key held down will re-size the window as you drag the mouse.

After some of the hassle that I've had this month, *DragIt* is great – small, easy to install and actually useful. Wonderful.

Program rating.....................10/10

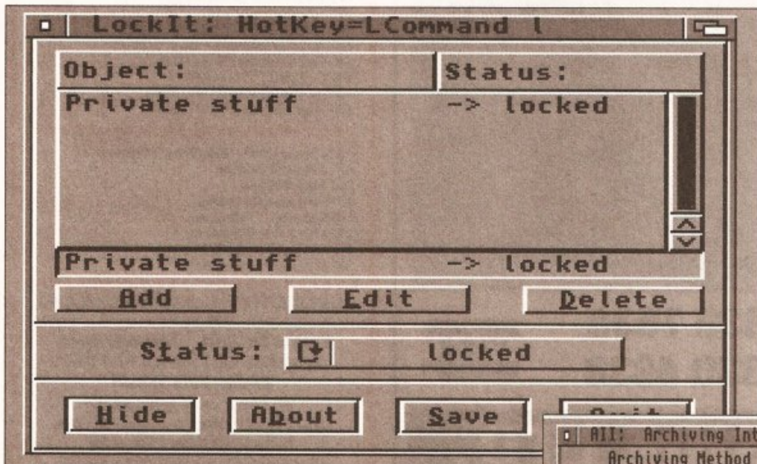
LOCKIT
Fish disk 798

If you are concerned that people might be looking at private files on your Amiga, *LockIt* could be the solution to your problems. It's a freeware program by Andreas Linneman which (under OS 2.0 or above) password-protects any files or folders you select; as long as *LockIt* runs during startup it will be virtually impossible for anyone to gain access to those objects – and that, of course, includes any files or sub-folders within a locked folder.

Using the program is easy: once *LockIt* has run during startup it places an icon on the Workbench screen – double-click on that icon and the main *LockIt* window appears. From there you can add or remove items which you want to protect, and lock or unlock each item. This is where my only real complaint with the system came: although unlocking an item requires the password (as, of course, it should), locking it does not (as long as the password has previously been set). And there's no 'administrator' password – so someone else could come along and lock other programs on your Amiga.

Also, the easiest way around the protection is just to make sure that the program doesn't load at startup – either by booting from a different startup floppy or by removing it from the WBStartup drawer. If this happens, access is uncontrolled. On the other hand, for basic security – keeping the kids' hands off your business work, or preventing students from seeing each other's work – the program works well. Without serious hacking it seems to be virtually impossible to break into a locked item (except via the methods above), and it may well prove useful. I'm just really nervous about any form of password-protection that doesn't require a main administrator password to invoke...

Program rating.......................7/10



Prevent people prying into private files with *Lockit*

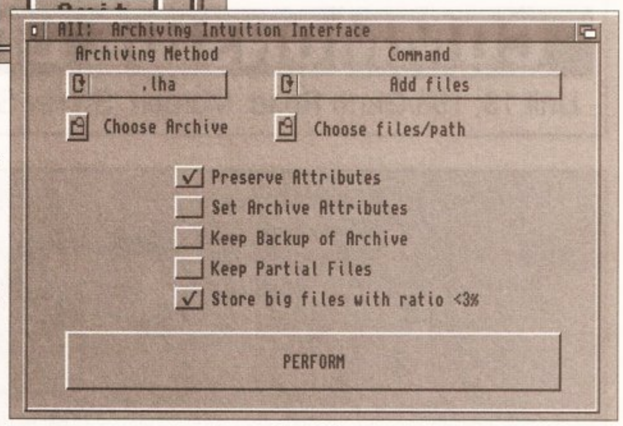
ARCHIVING INTUITION INTERFACE
Fish disk 799

One of the unalterable laws of computing is that you can never have enough disk space, so compressing or archiving data is A Good Thing. If you need to use the *LhA* archiving utility but you're not keen on delving into a million command-line options, the *Archiving Intuition Interface (AII)* is just what you need. Written by Paul McLachlen, this $5 shareware utility puts an Intuition front-end on to *LhA;* while it doesn't support every option available in the compressor (there are so many that it would end up being hopelessly confusing), all the main choices are there, and the chances are that you'll never need the CLI again.

All you do is double-click on *AII,* select a couple of options and hit the Perform button. You choose the archive (or create a new one) via one button, choose the files to add to the archive via another, and select what to actually do (list the archive contents, freshen the archive, extract or add files and so on) via yet another. The program will create .lha or .lzh archives, and you can choose whether to do things like preserve file attributes and set archive attributes – again, all from the one window.

The program works like a dream – almost. Unfortunately, quite often *AII* confused the name of the archiver (which you must select the first time you use *AII*), and it had to be re-selected. Still, even doing that every time is far quicker than trying to remember all those ridiculous command-line switches and working out your file matching pattern so that the files you want are included – *AII* enables you to select the files you want just by clicking on them. This is version 1.03, the first release. I guess there will be a v1.04 real soon now, to correct the bug mentioned above, and then this should be a program that all Workbench users have on their disk.

Program rating...........9/10



***Archiving Intuition Interface:* the acceptable face of the *LhA* compression program**

AMIGA-WORLD
Fish disk 804

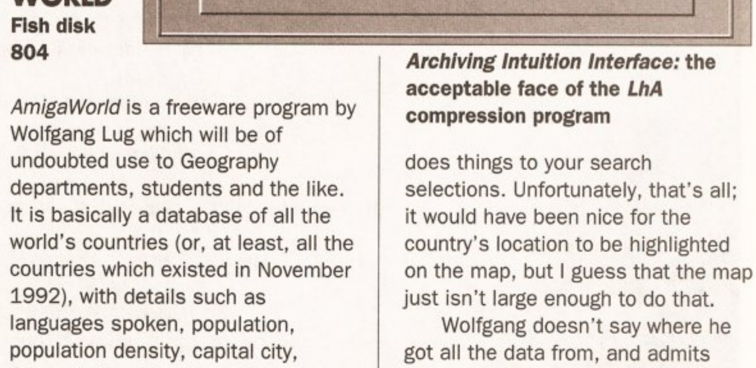
AmigaWorld is a freeware program by Wolfgang Lug which will be of undoubted use to Geography departments, students and the like. It is basically a database of all the world's countries (or, at least, all the countries which existed in November 1992), with details such as languages spoken, population, population density, capital city, Gross National Product (GNP) and GNP per person.

The program is exceptionally easy to use: you can sort the list of countries by name, size or population – and if you send the author $20 you will receive a fuller version which also enables you to sort by population density, GNP and GNP per person. Further, you can display just portions of the country list – just Europe and Asia, for example. Searching for a country is easy: in this version you can search by name or capital city, and the registered version will also enable you to search by language or location. The program knows a range of names for many countries, so asking for 'UK', 'England' or 'United Kingdom' will get you a display of this sceptic isle – although asking for 'Scotland' or 'Wales' draws a blank.

There are two languages supplied – German and English – and the documentation file includes details on how to translate the data file into other languages, although as the author says, there's a great deal of work involved in doing this.

A small map is displayed on the main screen, and clicking on this does things to your search selections. Unfortunately, that's all; it would have been nice for the country's location to be highlighted on the map, but I guess that the map just isn't large enough to do that.

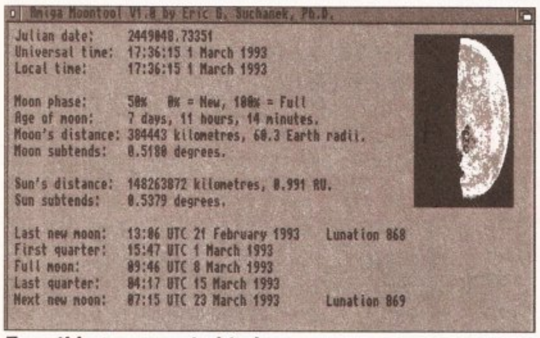
Wolfgang doesn't say where he got all the data from, and admits that there may be spelling mistakes



***AmigaWorld:* geographical facts by the bucketload**

and other errors. And of course, the world is changing pretty fast. Even so, this is a program which many will find useful, and is certainly worth checking out.

Program rating 8/10



Everything you wanted to know about the moon but were afraid to ask... Or didn't really care about

MOONTOOL
Fish disk 800

Well, let's finish off this month with a totally pointless little utility – *Moontool*, ported from John Walker's Unix version by Eric Suchanek. Do you want to know the current phase of the moon? How far it is away from you? Its angle? How long it will be before we next see a full moon? Wonder no longer. This utility will tell you it all – and much more. Hey! I just realised! The Julian date right now is 2449048.73426! (Sounds more like the Star Date on *Star Trek* to me...)

I guess that if you're an astronomer (or a collector of totally trivial information), this program may have some use to you. As far as I'm concerned, I have to paraphrase Dave Winder, the *Amiga Shopper* comms columnist: "M-O-O-N, that spells useless." And yes, I know who he's quoting, too. Beam me up, Scotty. AS

WHERE TO GET IT

There are two main ways to get hold of Amiga PD and shareware: from a bulletin board or from a PD library.

The advantage of using a bulletin board is that often the latest software is uploaded as soon as it's available. On the down side, you need a modem to connect, and you'll have to pay phone charges (and sometimes a connection fee to the bulletin board as well).

There is a growing number of bulletin boards with a wide range of Amiga software available for download. Check out 01-for Amiga (071 377 1358) and the Cheam Amiga Bulletin Board (081 644 8714). Another good option is joining CIX (the Compulink Information eXchange), which not only has Amiga software but also contains conference and file areas on a wide range of subjects. Many of the *Amiga Shopper* writers have accounts on CIX, so you can get first-hand advice on your problems, too. For more details, call CIX on 081 390 8446 (voice) or 081 390 1255 (modem).

If you don't want to use a bulletin board, the other way to get PD software is from a PD house. Many advertise in *Amiga Shopper*, and you'll find a comprehensive list of names and addresses below. Expect to pay between 99p and about £2.50 per disk – there's often a discount if you buy in bulk, too. As for the difference between the companies which charge 99p and those which charge £2.50 – well, try both types. There are brilliant, totally professional PD houses which charge less than a quid, and there are totally incompetent (dis)organisations which charge more than twice that.

UK PD HOUSES

Amiganuts United
169 Dale Valley Road
Hollybrook
Southampton

AMOS PD
1 Penmynydd Road
Penlan
Swansea
SA5 7EH

Anglia PDL
115 Ranelagh
Felixstowe
Suffolk
IP11 7HU
☎ 0394 283494

Blitterchips
Cliffe House
Primrose Street
Keighley
BD21 4NN
☎ 0535 667469

Crazy Joe's
145 Effingham Street
Rotherham
South Yorks
S65 1BL
☎ 0709 829286

Deltrax PD
36 Bodelwyddan Ave
Old Colwyn
Clwyd LL29 9NP
☎ 0492 515981

Deja Vu
7 Hollinbrook
Beech Hill
Wigan WN6 7SG
☎ 0942 495261

Essex Computer Systems
118 Middle Crockerford
Basildon
Essex
SS16 4JA
☎ 0268 553963

George Thompson Services
Cucumber Hall Farm
Cucumber Lane
Essendon
Herts
AL9 6JB
☎ 0707 664 654

ICPUG
PO Box 1309
London
N3 2UT
☎ 081-346 0050

NBS
1 Chain Lane
Newport
Isle Of Wight PO30 5QA
☎ 0983 529594

PD Soft
1 Bryant Ave
Southend-on-Sea
Essex
SS1 2YD
☎ 0702 466933

Pentire PD
10a Hag Hill Lane
Taplow
Maidenhead
Berks SL6 0JH
☎ 0628 666641

Riverdene PDL
30a School Road
Tilehurst
Reading
Berkshire RG3 5AN
☎ 0734 452416

Telescan Computer Services
Handsworth Road
Blackpool FY5 1SB
☎ 0253 22296

Sector 16
160 Hollow Way
Cowley
Oxford
☎ 0865 774472

Seventeen Bit Software
PO Box 97
Wakefield
West Yorks
WF1 1XX
☎ 0924 366982

Software Expressions
Unit 4
44 Beauley Road
Southville
Bristol BS3 1PY
☎ 0272 639593

Softville
Unit 5, Stratfield Park
Elettra Avenue
Waterlooville
Hants PO7 7XN
☎ 0705 266509

Startronics
4 Arnold Drive
Droylsden
Manchester M35 6RE
☎ 061 370 9115

Vally PD
PO Box 15
Peterlee
Co Durham SR8 1NZ
☎ 091-587 1195

Virus Free PD
31 Farringdon Road
Swindon
Wiltshire SN1 5AR
☎ 0793 512321

PRODUCTS

PRODUCT LOCATOR

PRODUCT LOCATOR

HARDWARE • HARDWARE • HARDWARE • HARDWARE • HARDWARE • HARDWARE • HARDWARE • HARDWARE

Welcome to the *Amiga Shopper* Buyer's Guide, your regular guide to what's hot and what's not in the Amiga market place. It's designed as a simple-to-use yet comprehensive guide which will help you to make the right buying decisions. It may not include each and every product ever produced for the Amiga (that would take up virtually the whole of *Amiga Shopper!*), but you can rest assured that all major brands and models are here.

The Buyer's Guide will run each and every month and as new products are released and others discontinued, we'll be updating it accordingly. This month we bring you what is possibly the most comprehensive guide to hardware for the Amiga owner. Next month we'll be listing Amiga software...

AMIGAS

Model	Price	Memory	Total Chip	Total Fast	Processor	Speed (MHz)	Hard Disk (Mb)	Floppies	Comment
A600	£299	1 Mb	2 Mb	4 Mb	68000	7	No	1x880k	Replacement for now-discontinued A500 Plus
A600HD	£499	1 Mb	2 Mb	4 Mb	68000	7	20	1x880k	A600 with built-in 20Mb IDE
A1500	£999	1 Mb	1 Mb	9 Mb	68000	7	No	2x880k	More expandable than A500
A2000HD	£1,299	1 Mb	1 Mb	9 Mb	68000	7	40	1x880k	Exactly the same as A1500, but now includes hard disk
A3000	£1,300	2 Mb	2 Mb	16 Mb	68030	16/25	50/100	1x880k	Available in several hard disk/processor configurations
A1200	£399	2 Mb	2 Mb	8 Mb	68020	14.2	No	1x880k	Latest Amiga fitted with AGA
A4000	£2,000	6 Mb	2 Mb	16 Mb	68040	25	120	1x1.76	Flagship of Amiga range

Note: A500 and A1500 now denote 2.0-based machines.

HARD DRIVES

Model	Supplier	Price	Machine	Capacity (Mb)	RAM Expansion	Rating	Issue
500XP	Surface UK	£489	A500	40	2/8 Mb	****	1,2,8,13
A590	Commodore	£399	A500	20	2 Mb	***	1,2,8,13
DataFlyer500	Trilogic	£350	A500	48	–	**	1,2,8,13
FastTrak	Third Coast	£599	A500	40	–	***	8
Impact II+	Silica	£399	A500	50/110	8 Mb	*****	1,2,8,13
Novia 30i	Power Computing	£399	A500	20/30	–	***	8
Prima	Power Computing	£499	A500	50/100	–	****	8
Protar HD	Protar	£299	A500	20	8 Mb	****	–
RocHard	Zye Technology	£379	A500	52	8 Mb	****	13
Trumpcard	Third Coast	£399	A500*	40	–	***	8
A2091-40	Commodore	£200	A1500→	40	–	**	8,13
DataFlyer2000	Trilogic	£350	A1500→	48	–	***	1,2
Impact IIHC+8	Silica	£299	A1500→	40-300	8 Mb	****	1,2,13
Nexus HC	Power Computing	£350	A1500→	40	8 Mb	****	8,13
WordSync2000	Surface UK	£450	A1500→	52	–	****	1,13
OpticalDrive	Power Computing	£1,199	SCSI	128	–	****	–
SysQuest	Omega Projects	£690	SCSI	88	–	****	8
TapeStreamer	Omega Projects	£600	SCSI	150	–	*****	–

Note: Trumpcard can be used on both A500 and A1500→

EXTERNAL DRIVES

Model	Supplier	Price	Machine	Size	Capacity	Disable Switch	Rating	Issue
3A-1D	Golden Image	£65	Any	3.5 inch	880K	Yes	****	0,8
A1011	Commodore	£100	Any	3.5 inch	880K	No	***	0,1,2,8
AEHD	Applied Engineering	£140	Any	3.5 inch	1.52 Mb	No	*****	8
CAX354	Cumana	£75	Any	3.5 inch	880K	Yes	****	0,1,2,8
DualDrive	Power Computing	£120	Any	3.5 inch	2x880K	Yes	****	0,1,2,8
Floptical Disk	Digital Micronics	£650	Any	3.5 inch	20 Mb	Yes	*****	8
PC880B	Power Computing	£55	Any	3.5 inch	880K	Yes	*****	8
RF332C	Silica Systems	£60	Any	3.5 inch	880K	Yes	****	0,1,2,8
RF542C	Silica Systems	£80	Any	5.25 inch	880K	Yes	****	0,1,2,8
Zydec	Evesham Micros	£55	Any	3.5 inch	880K	Yes	***	8
Internal2000	Power Computing	£50	A1500→	3.5 inch	880K	No	****	8

Note: **PC880B comes with built-in disk copier. Enquire about availability of the Floptical Disk.**

RAM EXPANSIONS

Model	Supplier	Price	Machine	Size	Max Size	Power Supply?	Fitting	Rating	Issue
500RX	Surface UK	£198	A500	2 Mb	8 Mb	Optional	Expansion Bus	*****	5
AD501	Ashcom	£21	A500	512K	512K	No	TrapDoor	*****	24
Addax	Ashcom	£125	A500	2 Mb	8 Mb	No	Expan Bus	****	24
Ashcom1.8Mb	Ashcom	£155	A500	1.8 Mb	–	No	TrapDoor	****	–
Ashcom512k	Ashcom	£35	A500	512k	–	No	TrapDoor	****	8
BaseBoard	EPD	£300	A500	4 Mb	–	No	TrapDoor	****	–
PC501	Power Computing	£30	A500	512K	512K	No	TrapDoor	****	24
Power 8 Mb	Power Computing	£109	A500	2 Mb	8 Mb	No	Expan Bus	*****	24
ProRAM Plus	Datel	£25	A500	512k	–	No	TrapDoor	***	8
ProRAM501	WTS Electronics	£19	A500	512K	512K	No	TrapDoor	****	24
RAM-Master 2	Datel	£100	A500	1.5 Mb	–	No	TrapDoor	***	–
V2000	Virgo	£104	A500	2 Mb	–	No	TrapDoor	*****	–
Zydec1.5	Zydec	£79	A500	1.5 Mb	–	No	TrapDoor	****	–
ProAgnus	WTS Electronics	£139	A500/2000	1 Mb	Chip Ram Exp	No	Internal	****	24
PC501+	Power Computing	£36	A500 Plus	1 Mb	1 Mb	No	TrapDoor	*****	24
AX601	Ashcom	£45	A600	1 Mb	1 Mb	No	TrapDoor	****	24
AmiTek600	Silica Systems	£45	A600	1 Mb	1 Mb	No	TrapDoor	****	24
PC601	Power Computing	£40	A600	1 Mb	1 Mb	No	TrapDoor	*****	24
ProRAM601	WTS Electronics	£38	A600	1 Mb	1 Mb	No	TrapDoor	*****	24
A2058	Commodore	£150	A1500+	2 Mb	8 Mb	No	Zorro	****	24
Aries2000	Power Computing	£129	A1500+	2 Mb	8 Mb	No	Zorro	*****	24
A2058	Commodore	£159	A1500→	2 Mb	8 Mb	No	Card	****	8
AdRAM2000	Power Computing	£179	A1500→	2 Mb	8 Mb	No	Card	****	8
GVP Series2	Silica	£159	A1500→	2 Mb	8 Mb	No	Card	*****	–
HD8+	Silica Systems	£150	A1500+	0 Mb*	8 Mb	No	Zorro	*****	24

Note: **HD8+ has no RAM fitted as standard and requires SIMM modules at approximately £50 extra per Mb.**

PRODUCT LOCATOR

PRODUCT LOCATOR

PROCESSOR ACCELERATORS

Model	Supplier	Price	Machine	Processor	Speed	Max 32-bit RAM	Maths Co-pro	Rating	Issue
38 Special	Omega Projects	£850	Any	68030	38 MHz	8 Mb	68881	****	13
040/500	Power Computing	£725	A500	68040	28 MHz	8 Mb	68882	*****	14
040/500i	Power Computing	£NA	A500	68040	28 MHz	16 Mb	–	****	14
A5000-16	Solid State	£295	A500	68020	16 MHz	4 Mb	Yes	*****	–
A530	GVP/Silica	£800	A500	68030	40MHz	8 Mb	68882	*****	20
AdSpeed	Silica	£173	A500	68000-16	16 MHz	–	No	****	3,5
B5000-25	Solid State	£595	A500	68020	25 MHz	16 Mb	Yes	****	3,5
CSA MegaMidget	Bytes&Pieces	£389	A500	68030	33 MHz	8 Mb	Yes	****	3,5
Turbo68000	Bytes&Pieces	£45	A500	68000-16	16 MHz	–	No	**	–
VXL-30	ZCL Ltd	£409	A500	68030	25 MHz	8 Mb	Yes	****	–
CSA Rocket Launcher	Omega Products	£549	A1500	68030	50MHz	–	68882	*****	20
G-Force	Silica	£599	A1500	68030	25 MHz	16 Mb	68881	****	15
2000/40	Marcam	£1,937	A1500→	68040	50 MHz	32 Mb	Yes	*****	–
40/4 Magnum	Omega Projects	£NA	A1500→	68040	28 MHz	16 Mb	68882	*****	13
A2630	Commodore	£1,200	A1500→	68030	25 MHz	4 Mb	Yes	****	–
A3001	Silica	£1,799	A1500→	68030	50 MHz	32 Mb	Yes	*****	3,5
B5000-40	Solid State	£1,162	A1500→	68030	40 MHz	32 Mb	Yes	*****	–
FusionForty	Power Computing	£1,999	A1500→	68040	50 MHz	32 Mb	Yes	****	–
Harms Pro30	Bytes&Pieces	£1,099	A1500→	68030	28 MHz	4 Mb	Yes	***	3,5
Zeus	Power Computing	£1,449	A1500→	68040	28 MHz	64 Mb	68882	*****	14
CBM 040 Card	Commodore	£NA	A3000	68040	40MHz	NA	Yes	*****	20
G-Force	Silica	£1,999	A3000	68040	28 MHz	–	–	*****	–
Mercury	Power Computing	£1,249	A3000	68040	28 MHz	32 Mb	68882	*****	14

***Note:* Although some 68030 cards appear to run faster than their '040 equivalents, this may not necessarily be the case. All '040 cards will run faster internally.**

SCANNERS

Model	Supplier	Price	Machine	Type	Colour	Resolution	Rating	Issue
AlfaScan	Golden Image	£199	Any	Hand Held	No	400dpi	*****	14, 22
DaataScan 2GS	Pandaal	£125	Any	Hand Held	No	400dpi	***	14, 22
GT-6000	Epson UK	£1300	Any	Flatbed	Yes	600dpi	*****	17
GeniScan	Datel	£130	Any	Hand Held	No	400dpi	***	–
GoldenImage	GoldenImage	£150	Any	Hand Held	No	400dpi	*****	5
Handy Scanner	Pandaal	£140	Any	Hand Held	No	400dpi	***	14
Pandaal Scanner	Pandaal	£180	Any	Hand Held	No	400dpi	****	3
Power Scanner 2	Power Computing	£99	Any	Hand Held	No	400dpi	*****	14
Powerscan Colour	Power Computing	£239	Any	Hand Held	Yes	400dpi	***	23
Sharp JX-100	Silica	£695	Any	Hand Held	Yes	200dpi	*****	–
Sharp JX-300	Silica	£3600	Any	FlatBed	Yes	300dpi	*****	–

DIGITISERS

Model	Supplier	Price	Realtime	Colour	Realtime Colour	Animation	Rating	Issue
ColourPic	JCL	£399	Yes	Yes	Yes	No	****	2
ColourPic Plus	JCL	£699	Yes	Yes	Yes	Yes	****	22
DigiTiger II	SA&H	£200	No	Yes	No	No	****	17
DigiView 4	Silica	£150	No	Yes	No	No	****	–
FrameGrabber	Marcam	£599	Yes	Yes	Yes	Yes	*****	–
V-Lab	ACS	£300	Yes	Yes	Yes	No	****	17
VIDIAmiga	Rombo	£130	Yes	Yes	No	Yes	****	5
VideoDigitiser	Datel	£80	Yes	Yes	No	No	****	–
Videon	Power Computing	£200	No	Yes	No	No	***	–
Vidi-12	Rombo	£99	Yes	Yes	No	Yes	*****	22

SOUND SAMPLERS

Model	Supplier	Price	Stereo	Volume Adjust	Resolution	Rating	Issue
AD1012	HB Marketing	£399	Yes	Yes	12-bit	*****	–
AD1016	HB Marketing	£TBA	Yes	Yes	16-bit	*****	–
AMAS 2	MicroDeal	£100	Yes	Yes	8-bit	****	–
Audio Engineer	HB Marketing	£199	Yes	Yes	8-bit	*****	5
Audition 4	HB Marketing	£49	Yes	Yes	8-bit	****	10
GVP DSS	Silica	£60	Yes	Yes	8-bit	****	3
MicroSampler	Datel	£25	Yes	No	8-bit	*	–
Perfect Sound 3	HB Marketing	£60	Yes	Yes	8-bit	***	10
SampleStudio 2	Datel	£70	Yes	No	8-bit	**	–
Sound Master	HB Marketing	£130	Yes	Yes	8-bit	*****	–
SoundTrap 3	Omega Projects	£30	No	No	8-bit	****	3
StereoMaster	MicroDeal	£40	Yes	Yes	8-bit	****	11
StereoSampler2	Trilogic	£40	Yes	Yes	8-bit	****	–
TechnoSound	New Dimensions	£35	Yes	No	8-bit	****	5

Note: AD1012 and AD1016 are for A1500→ only

GENLOCKS

Model	Supplier	Price	Fade	Dissolve	S-VHS	RGB Pass thru	Rating	Issue
8802 FMC	Marcam	£178	Yes	No	No	Yes	***	–
A8802	Marcam	£139	No	No	No	Yes	***	–
A8802S-VHS	Marcam	£499	Yes	Yes	Yes	Yes	***	10
A8806	Marcam	£499	No	No	No	Yes	*****	–
GST Gold	Third Coast	£550	Yes	Yes	Yes	Yes	****	–
Hama 290	Hama PVAC	£749	Yes	Yes	Yes	Yes	****	16
ImageMaster	Neriki	£1,150	Yes	Yes	Yes	Yes	***	–
MicroGen	Power Computing	£199	Yes	Yes	No	Yes	****	–
MiniGen	ASAP	£99	No	No	No	No	**	–

PRODUCT LOCATOR

ProGen	Gordon Harwood	£130	No	No	No	Yes	***	–
RocGen	Silica	£117	Yes	Yes	No	No	****	8
RocGen+	Silica	£199	Yes	Yes	No	Yes	****	10
VideoCentre2	G2	£1,170	Yes	Yes	Yes	Yes	****	–
VideoCentre3	G2	£1,999	Yes	Yes	Yes	Yes	****	7
VideoMaster VM-2	Power Computing	£799	Yes	Yes	Yes	Yes	***	1
Videocomp G-100	Silica	£1,800	Yes	Yes	Yes	Yes	*****	3

COLOUR CARDS

Model	Supplier	Machine	Price	Type	Colour Palette	Max Resolution	Rating	Issue
DCTV	Silica	A500	£499	Pseudo	24-bit	368x580	****	12
OpalVision	Micro-PACE	A1500→	£899	24-bit	24-bit	768x580	*****	20
AVideo 12	Checkmate	A1500→	£299	12-bit	12-bit	768x580	***	13
AVideo 24	Checkmate	A1500→	£599	24-bit	24-bit	768x580	****	15
GVP IV-24	Silica	A1500→	£1,799	24-bit	24-bit	910x576	****	12
Harlequin	ACS	A1500→	£1,400	24-bit	24-bit	910x576	*****	11
Rembrandt	Power Computing	A1500→	£1,499	24-bit	24-bit	1024x1024	****	13

***Note:* A500 devices can be used on all Amigas**

TOUCH TABLETS

Model	Supplier	Price	Size	Resolution	Rating	Issue
Cherry Mk4	Cherry	£450	9x12"	*****	***	–
Genitizer	Datel	£130	9x6"	****	****	–
Podstat PT-3030	HB Marketing	£179	9x12"	*****	*****	–

DOT MATRIX PRINTERS

Model	Supplier	Price	Pins	Speed(CPS)	Fonts	Buffer	Rating	Issue
LQ550	Epson	£375	9	109	4	8K	***	4
Swift 9	Citizen	£280	9	121	3	8K	*****	4
LX850	Epson	£269	9/24	106	3	4K	***	4
200	Citizen	£250	24	240	7	8K	****	–
240C	Citizen	£350	24 (colour)	240	9	8K	*****	–
L24d	Citizen	£292	24	109	3	8K	****	4
LC200	Star	£304	24	91	4	16K	****	4
LC24	Star	£304	24	130	5	16K	****	4
LQ400	Epson	£269	24	121	3	8K	****	4
ML380	Oki	£386	24	127	3	8K	****	4
P20	NEC	£351	24	115	8	8K	****	4
Swift 24	Citizen	£428	24	121	5	8K	****	4

INKJET PRINTERS

Model	Supplier	Price	Nozzles	Speed CPS	Fonts	Resolution	Rating	Issue
B100	Fujitsu	£349	48	160	3	300dpi	****	22
B200	Fujitsu	£499	48	180	3	300dpi	***	22
BJ-10ex	Canon	£299	64	83	4	360dpi	*****	22
BJ300	Canon	£495	64	300	3	360dpi	****	22
Diconix 701	Kodak	£399	48	200	3	300dpi	***	22
Projet	Citizen	£496	48	360	3	360dpi	****	22
SQ870	Epson	£659	48	360	8	360dpi	****	22

LASER PRINTERS

Model	Supplier	Price	Memory	Speed (pgs per min)	Fonts	Resolution	Rating	Issue
EPL4000	Epson	£799	512K–5.5Mb	6	2	300dpi	****	22
LBP-4 Plus	Canon	£1,175	512K–2.5Mb	5	5	300dpi	****	22
Laser 4	Star	£1,173	1Mb–5Mb	4	4	300dpi	****	22
OL400	Oki	£549	512K–2Mb	4	4	300dpi	*****	22
Ricoh LP1200	Silica	£820	2Mb–4Mb	6	6	400dpi	*****	22

MISCELLANEOUS HARDWARE

Model	Supplier	Price	Type	Rating	Issue
Golden Gate	Silica Systems	£N/A	25MHz 80386 PC Emulator for Amiga 1500+	****	–
I/O Port	SwitchSoft	£28	Electronics Projects kit	****	17
ICD KickBack	Silica Systems	£27	Keyboard switchable ROM sharer	*****	–
Kickswitch	Omega Projects	£25	Keyboard switchable ROM sharer	*****	–
RocKey	Silica Systems	£350	Chromakey for RocGen Plus genlock	N/A	–
Sound Enhancer	Omega Projects	£40	Improved Amiga sound capabilities	*****	–

If your company has a product which you think deserves to appear in the *Amiga Shopper Product Locator*, please write to us at the usual editorial address with full details.

• SUPPLIER LIST • SUPPLIER LIST • SUPPLIER LIST •

ACS 031 557 4242
App. Engineering 0101 214 241 6060
ASAP 0724280222
Ashcom 0530 411485
Bytes & Pieces 0253 734218
Checkmate Digital Ltd 071 923 0658
Citizen 0895 72621
Commodore 0628 770088
Cortex 051 236 0480
Cumana 0483 503121
Datel Electronics 0782 744707
Digital Micronics 0101 619 431 8301
EPD 0602 841640
Epson UK 0442 61144
Evesham Micros 0386 765500
G2 Video Systems 0252 737151
Gasteiner 081 365 1151
Golden Image 081 518 7373
Gordon Harwood 0773 836781
HB Marketing 0753 686000
JCL Business Systems 0892 518181
Marcam Ltd 0604 790466
MicroDeal 0726 68020
Naksha UK 0925 56398
NEC 081 993 9831
Neriki 081 900 1866
New Dimensions 0291 690933
Oki 0753 31292
Omega Projects 0702 466933
Pandaal Marketing 0234 855666
Power Computing 0234 273000
Protar 0923 54133
Rombo 0506 414631
SA & H 010 40 0511 551701
Silica Systems 081 309 1111
SMG 0274 562999
Solid State Leisure 0933 650677
Star 0494 471111
Surface UK 081 566 6677
Switchsoft 0325 464423
Third Coast Technologies 0257472444
Trilogic 0274 678062
Virgo 0276 676308
WTS Electronics 0582 491949
ZCL Ltd 0543 251275

BUYING ADVICE FOR SHOPPERS

Whether buying over the phone or at a local store, here's our advice on how to get what you want

BUYING IN PERSON

- Where possible, always test any software and hardware in the shop before taking it home, to make sure that it works properly.
- Make sure you have all the necessary leads, manuals or other accessories you need.
- Don't forget to keep your receipt.

BUYING BY PHONE

- Be as clear as possible when stating what you want to buy. Make sure you confirm all the technical details of what you are buying. Some things to bear in mind are version numbers, memory requirements, other required hardware or software and compatibility with your particular model of Amiga (that is, make sure you know which version of Kickstart you have).
- Check the price you are asked to pay, and make sure that it's the same as the price advertised.
- Check that what you are ordering is actually in stock.
- Check when and how the article will be delivered, and that any extra charges are as stated on the advert.
- Make a note of the date and time when you order the product.

BUYING BY POST

As with buying by phone, you should clearly state exactly what it is you are buying, at what price (refer to the magazine, page and issue number where it's advertised) and give any relevant information about your system set-up where necessary. You should also make sure you keep copies of all correspondence both to and from the company concerned.

MAKING RETURNS

Whichever method you buy by, you are entitled to return a product if it fails to meet any one of the following three criteria:

- The goods must be of 'merchantable quality'.
- The goods must be 'as described'.
- The goods must be fit for the purpose for which they were sold.

If they fail to satisfy any or all of the criteria, then you are then entitled to:

- Return them for a refund.
- Receive compensation for part of the value.
- Get a replacement or free repair.

When returning anything, ensure that you have proof of purchase and that you return the item as soon as possible after receiving it. For this reason it is important that you check the hardware or software as soon as it is delivered to make sure everything you ordered is there and works as it is supposed to.

HOW TO PAY

Paying by credit card is the most sensible way, whether buying in person, by post or on the phone, because you may be able to claim the money from the credit card company even if the firm you ordered from has gone bust or refuses to help sort out your problem.

Otherwise, you should pay by crossed cheque or postal order – never send coins or notes through the mail.

GETTING REPAIRS

Always check the conditions of the guarantee, and servicing and replacement policy, so that you know what level of support to expect. Always fill in and return warranty cards as soon as possible, and make sure that you are aware of all the conditions contained in the guarantee.

BUYING PD

Even though PD software is relatively inexpensive, you should still apply the guidelines set out above, making sure that you confirm all orders as clearly as possible.

Shopping around is still important when buying PD because different houses charge different prices for the same disks. There is no set pricing structure for disks, but bear in mind that PD houses are, in theory, supposed to be non-profit making operations. AS

A CHECK LIST FOR MAIL ORDER BUYING

1 **Make sure you know exactly what you want. Draw up a checklist of the specifications you are looking for and what you want it to be able to do. Check with the suppliers that their product matches your list.**

2 **Will the product you have in mind work with your existing set-up, and anything else you are planning to buy?**

3 **Can you see a demonstration? Many products are on display at computer shows around the country.**

4 **Are there any hidden extras? Does it need 1Mb to run, or a hard disk?**

5 **What technical support is provided by the supplier? Does the manufacturer offer after-sales advice? Check before you buy.**

6 **Check the guarantee terms. How long is the free warranty? What does it offer?**

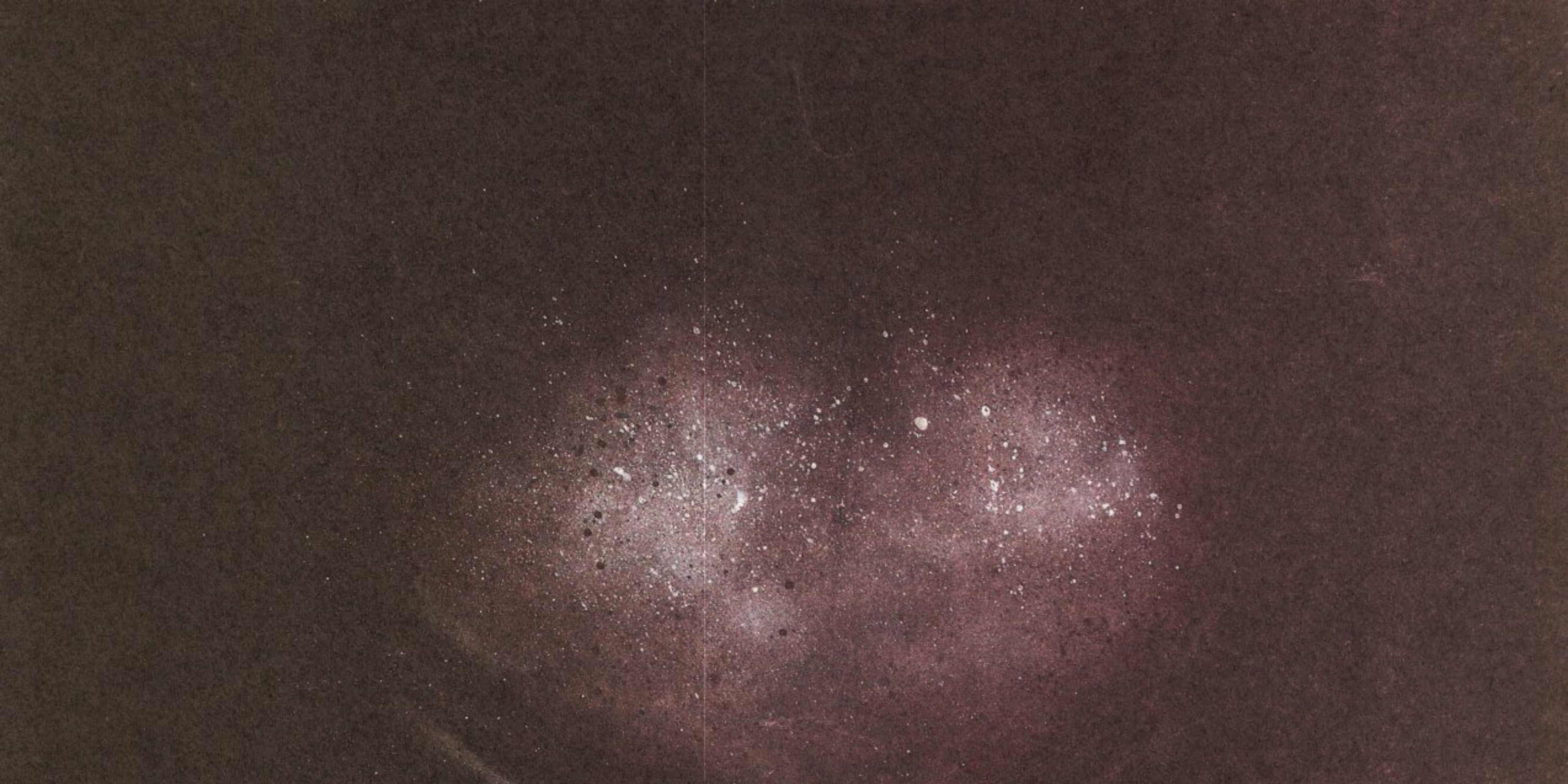
7 **Draw up a list of these details and make them a condition of your order.**

8 **Check the price and delivery details when you order, and make a note of them.**

9 **Note down when you placed the order and who you spoke to.**

10 **When it arrives, check everything carefully. If anything is missing, don't use the product at all – contact the supplier. If it doesn't work, make the obvious checks such as the fuse. If it still doesn't work don't try to fix it – contact the supplier.**

ADVERTISERS INDEX



WIN • WIN • WIN • WIN • WIN • WIN • WIN • WIN

Speed freaks – get a GVP accelerator



GVP accelerators have a well deserved reputation for both speed and reliability. Our winner this month gets to collect £800 worth of stylish kit for free.

Those talented people at Silica Systems have really pushed the boat out for our competition this month. They're offering *Amiga Shopper* readers the chance to win a superb A530 combined accelerator and hard drive.

Manufactured in the US by leading Amiga peripheral producers GVP, the A530 is a top-of-the-range 68030 accelerator running at 40MHz that can be easily fitted to any A500 or A500 Plus.

The A530 has an integral high-speed 80Mb SCSI hard disk and is supplied with 1Mb of 32-bit RAM already installed (this memory can be further expanded to 8Mb). What's more, you can add a 68882 FPU to make it even zippier still.

Want to get your hands on one? Well get your thinking cap on, answer the three questions in the right-hand panel and this super accelerator and hard drive worth £800 could soon be making your Amiga really zing.

Send your answers on a postcard (or the back of a sealed envelope) and include your name, address, postcode and details of your computer and any peripherals. The address is:

GVP....Woosh
Amiga Shopper
29 Monmouth Street
Bath BA1 2DL

The closing date is May 10. Send only one entry per household and please state if you would prefer not to have your name included on a mailing list.

THE CHALLENGE • THE CHALLENGE

1. GVP is based in which US state?
a) New Hampshire
b) California
c) Pennsylvannia

2. SCSI is an acronym for?
a) Small Computer System Interface
b) Semi Conductor Storage Interupt
c) Storage Cache System Interogation

3. The hard drive capacity is:
a) 80,000,000 bytes
b) 81,920,000 bytes
c) 80,001,024 bytes

THE CHAMPIONS!

The four winners from the Morph Fun For Me competition were: Mr P Gill of Dunmurry in Northern Ireland; Mr Paul Ross from Thornford in Dorset; Mr Simon Randall of Blackley in Manchester and Mr Andy Barnett who hails from Belfast – congratulations to all of you.

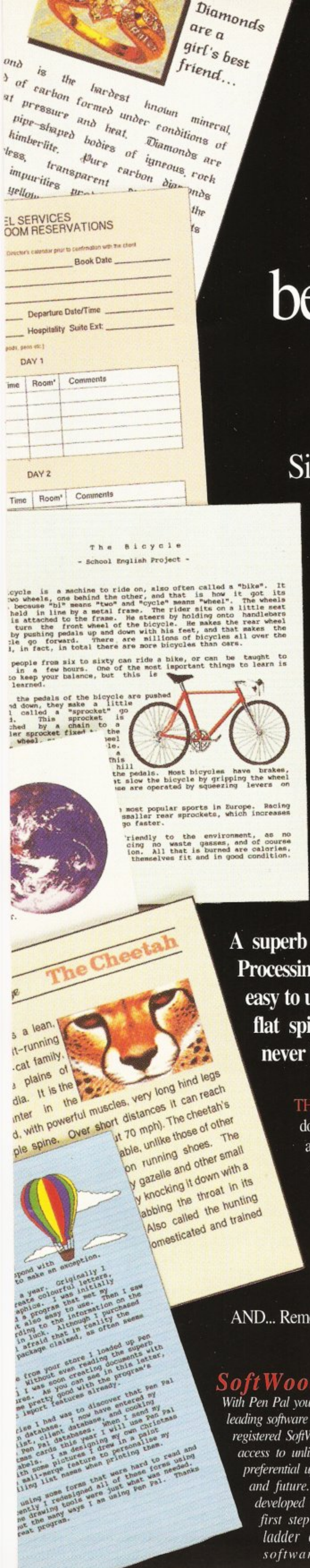
Each of them has won themselves a copy of US based ASDG's *Morph Plus* software worth £179.99. As you read this all four readers should be happily stretching, warping and twisting images to their hearts content.

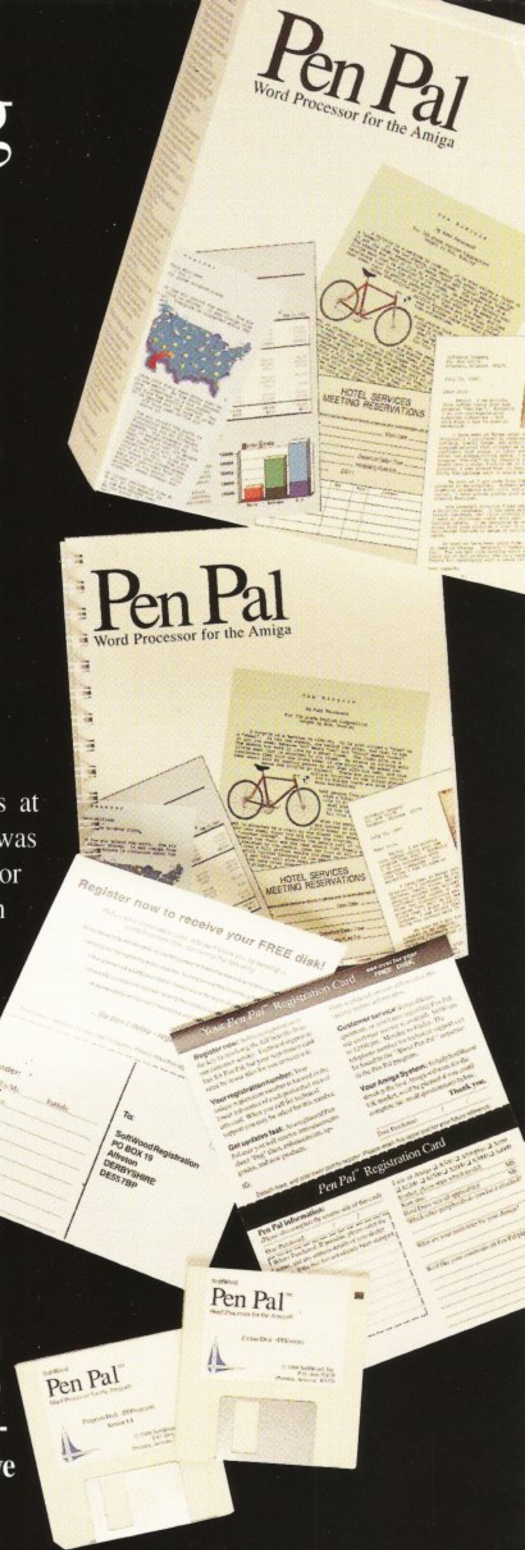
IN NEXT MONTH'S FACT-PACKED ISSUE

- The soul of the machine. Have you ever wondered how your Amiga works? Next month sees the start of a major new series that maps out every single aspect of this powerful but complex computer. We'll take you from a discussion of logic and a handfull of transistors to a complete understanding of the microprocessor, all of its support circuitry, and exactly how they all fit together.
- A review of Almathera's CD-ROM drive package.
- Create an address book in C, the language of the pros.

Plus: regular columns on Amiga Answers, public domain, video, AmigaDOS, desktop publishing, programming, education, music, chaos, comms and much more

>>>> On sale Tuesday, May 4 >>>>





The Best Selling Word Processor and Database just became even better...

VALUE!

Since its launch, Pen Pal has become the most popular package of its type

Not surprising when you consider the extensive features at your fingertips, combined with user friendly simplicity, it was bound to be a winner! In a comprehensive Word Processor test, Amiga Format commented "There is little to fault Pen Pal, it deserves to do well" - quite a prediction it seems! Format have since said that it's "Still the best value for money..." If you're not a Pen Pal user yet, we hope you soon will be, because at just £49.95... the best just became better, even better value!

Pen Pal

A superb package, with immense power, to fulfil all your Word Processing needs, and... with an integrated Database too! It's all so easy to use, you'll rarely need to refer to the extensive 250 page lay-flat spiral bound manual. Users frequently tell us that they've never found a program they get on with so well.

THE WORD PROCESSOR: You can... Open multiple documents simultaneously; search and replace; cut, copy and paste; check your spelling with a 110,000+ word dictionary; import your favourite IFF/HAM graphics, from programs such as DPaint, or Clip Art files in various sizes and colours; automatically flow text around graphics in any Workbench compatible font (there are over 200 available styles) in different sizes and colours to suit your design... Even as you type! Full Page View with position, edit and creation of graphic objects and extremely useful forms designer. All this from a word processor and... Much, Much, More! As you can see from the documents shown on the left, this is no ordinary program!

THE DATABASE: With 32 fields per record, 32,000 records per database and a fast sort of 1000 records in less than 5 seconds, this is a *real* database. Mail merging into the Word processor couldn't be simpler, with easy creation of templates for letters or reports, into which information can be merged.

AND... Remember, Pen Pal comes with full support for the new or experienced user completely free! Friendly help for all registered owners is just a phone call away.

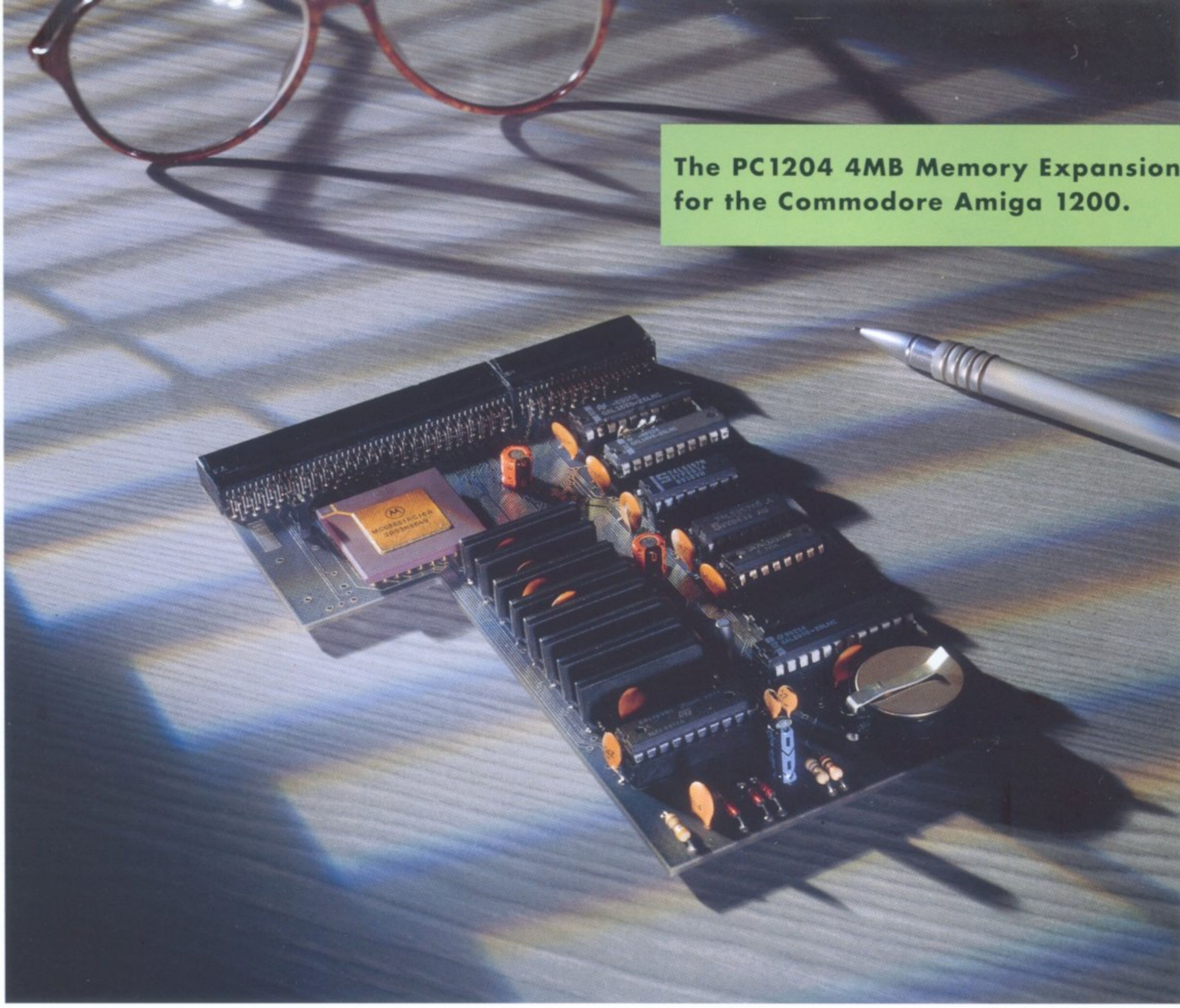
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Pen Pal is available from all good Amiga software Dealers or from SoftWood. Call for your list of stockists.

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Pen Pal is compatible with any Amiga from A500 to the latest A1200/A4000 ranges with a minimum of 1 Mb. available free memor



The PC1204 4MB Memory Expansion for the Commodore Amiga 1200.

Power Computing's innovative 4MB 32-bit memory expansion for the Amiga 1200 is now available. The PC1204 includes these many features:

Zero Wait State- Unlike some other expansions the PC1204 never leaves the processor waiting around for data, which means that your A1200 can run at its maximum speed.

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